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## ABSTRACT

Intended for teachers beginning to integrate the use of computers into the teaching of writing, this manual reports on a computer and writing skills project for teachers and discusses current theory and research in relation to the classroom experience, practical advice, and specific teaching suggestions of the 10 secondary school teachers involved in the project. The six chapters discuss the following: (1) the change from the traditional approach to teaching writing to translating current research into classroom practices; (2) the use of word processors to teach writing; (3) how to get started, including tips on hardware, a discussion of software packages, and reviews of software programs; (4) training students and teachers to use word processing; (5) how the microcomputer and process approach to writing instruction will affect teaching and learning; and (6) final thoughts, surprises, suggestions, and a summary. A list of commercial sources of information is included, and the appendix contains articles on teaching writing by using the word processor and on class-based writing research. (EL)

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# Hand in Hand: The Writing Process and The Microcomputer



## Two Revolutions in the Teaching of Writing A Manual for Secondary Teachers

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# Hand in Hand: The Writing Process And The Microcomputer

## Two Revolutions in the Teaching of Writing A Manual for Secondary Teachers

Alaska Department of Education  
Office of Instructional Services  
June, 1985

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Commissioner of Education

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Produced under contract for the Alaska Department of Education by the  
Douglas Borough School District  
June 1985, Alaska Department of Education

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The author wishes to thank the Juneau School District for its efforts in behalf of this project. The District's support of, and belief in, the importance and validity of teacher-generated classroom-based action research is unique in this state. It shows Juneau to be a district which actively acknowledges its teachers' expertise, professional growth, and contributions to the field.

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The opinions and ideas expressed in this book are those of the contributing authors and teachers, and are not meant to reflect the views of the Alaska Department of Education or the Juneau School District.

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Addison-Wesley, Reading, Massachusetts, 1985. Pgs xiv, 11-13, 57, 60, 61, 174, and 278-283.

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McKenzie, Jamieson. "Accordion Writing-Expository Composition with the Word Processor." **English Journal**. September 1984: 56-58. National Council of Teachers of English, Urbana, Illinois. Reprinted with permission.

Atwell Nancy. "Class-Based Writing Research: Teachers Learn from Students." **English Journal**. January 1982. 84-87. National Council of Teachers of English, Urbana, Illinois. Reprinted with permission.

Excerpts from "Computers and Writing: An Interview with Donald Graves" by John O. Green, **Classroom Computer Learning**, March 1984, 2451 E. River Road, Dayton, Ohio 45439.

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# Foreword

## Ten Teachers, Two Revolutions

A mutual interest in word processing and its applications to the teaching of writing sparked the Computer/Writing Skills Project in the spring of 1984, sponsored by the Alaska Department of Education, Office of Instructional Services. Ten secondary teachers from urban middle and high schools in the Juneau-Douglas Borough School District were provided with individual microcomputers, word processing software, and basic training in computer use. They were also given several workshops in the process model of writing instruction by teacher-consultants from the Alaska State Writing Consortium (part of the National Writing Project network). Three of the teachers attended the four week ASWC Open Institute, an intensive study of the writing process and the teaching of writing. Four of the teachers took supplementary computer courses, before and during the project.

The task of these teachers was to weave word processing into their instruction of writing in their content areas. (They were teachers of reading, geography and biology, as well as English.) In standard classroom-based research methodology, they were to document, through anecdotal logs, self-analysis, classroom activity reports, and student writing, what happened: how and what they, and their students, learned.

Though these teachers came from a variety of backgrounds, and had many years of successful teaching experience, they were all relatively new to computers ("cold, raw novices" as one teacher described it!), new to the process approach of teaching writing, and new to classroom research. Therefore, they brought fresh eyes, healthy skepticism, tentative enthusiasm, and few rigid biases or preconceptions to the project. Their early anxieties were like any other teacher's would be upon first entering the new world of the writing process/word processing classroom. There was understandable apprehension, but a genuine willingness to give it all a try.

This handbook is designed around the initial concerns, exploratory teaching and subsequent learning these teachers experienced. But the purpose of this book is not so much to report on the 1984 Computer/Writing Skills Project per se as to be a primer for other teachers beginning to integrate the use of computers into their understanding of the writing process and the teaching of writing. It is meant to be a compilation of current theory and research, balanced with real classroom experience, practical advice, and specific teaching suggestions from the teachers involved in the project, teachers who were willing to reflect upon, and articulate their own learning.

A reminder: in this field there are always more questions than answers. Any suggestion here should be seen as points of departure for further research and exploration, not hard and fast rules. The areas of writing and computers, not to mention teaching and learning, are too rich and complex to be reduced to mere "teacher-proof" recipes. Any good teacher is always asking questions, learning, and adapting ideas to his/her differing classroom needs, environments, and students.

However, there is also no need to totally reinvent the wheel. A lot of ground has already been broken by teachers and researchers who have been in the field for years. The teachers and students in this project pushed that knowledge even further, with the open-mindedness, risk-taking, and imagination that turned classrooms into communities of learners. As Donald Graves, writing researcher extraordinaire, said, "When students teach, teachers learn. When teachers learn, students learn." So it was.

G. Parson  
Juneau, Alaska  
June, 1985

## Joining the Revolutions: Why Bother?

### The First Revolution

In the last twenty years, writing and the teaching of writing have become the focus of intensive study and research. Much of this research has been conducted in the context of real classrooms, in collaboration with successful teachers examining their own practices, and observing their own students. The result has been a growing body of knowledge that has had a profound impact not only on our understanding of what writing is, but also on our assumptions about how to teach it.

Writing, we are realizing, is much more than punctuation, topic sentences, and grammar. Writing is thinking, making connections, *creating meaning*. Writing is about coming to know what we know. Writing is not just a packaged copy of knowledge already in the mind. It is a significant *act* of mind that uses language to form concepts, to shape knowledge, to actually generate thought.

When the force of these perceptions begins to inform teaching, a revolution is at hand. In classrooms where writing is viewed as a dynamic, cognitive, interactive process, rather than just a vehicle for focusing on mechanical and stylistic correctness, the old order seems clearly, almost absurdly inadequate. There's lots of fussing and fretting about the wrapping and the ribbons on the "writing package"—mechanics and spelling and five-paragraph formulas and adverbial clauses—but not nearly enough attention is paid to what's actually in the box, the generation, shaping and refinement of thought.

So, the teacher-centered, product-focused, prescriptive mode of traditional writing instruction has begun to shift to student-centered, process-focused instruction, where exploration and experimentation are valued, and where skills are taught in the context of the student's own writing intentions. Writing is being viewed as a process of discovery, which, when dignified and *made conscious*, increases student confidence, enthusiasm, and fluency. And, the bottom line is, writing quality also markedly improves.

It's an exciting world to live in, this "revolutionized" writing classroom. Students learn and share their writing with each other: their writing efforts and triumphs become just more grist for the mill in a community of learners. Skills are learned in

context, not isolation. Teachers become partners on the writing journey, fostering and contributing to the process, rather than just criticizing final products. In fact, one of the most profound shifts reflected in this new paradigm is the belief that teachers of writing must themselves write.

But to some, this new world feels a little heretical. It's a world where the rules seem all new, or worse, where the rules change from student to student, as we let them *lead us* into their struggles to shape their perceptions. But nonetheless, the new order continues to gain momentum, because it answers more of the questions, solves more of the problems, explains more inconsistencies and contradictions than the more traditional approach has been able to. Having students circle the nouns and underline the verbs perhaps taught students how to do just that, but it never taught writing, and it never will.

The process approach to writing instruction is no passing fad; it's a paradigm shift as profound as anything that has happened in the field of language and learning. It's here to stay.

### The Second Revolution

Even as deepened perceptions of the writing process are transforming writing instruction, another revolution has swept across the educational landscape, and landed squarely at the center of the writing classroom: the microcomputer.

And, classrooms are only a pale reflection of society's love affair with the computer. Nationally there are 10 million computers in homes across the country, with many more in business, and the numbers increasing every year. As it is, half a million computers exist in schools now, and in three or four more years, there could easily be a million or more. In Alaska alone, (as of December 1984) there is one computer for every 21 students, the highest ratio in the nation, and probably the highest of any school system in the world. (Only Minnesota, Wyoming, and Colorado come close, with ratios of 1 computer to every 40 or 50 students.) There's no turning back this tide, either.

Like any significant intellectual upheaval (in fact, much like the initial turmoil surrounding the innovation of the process approach to teaching writing) the computer revolution in the writing classroom is characterized by controversy, anxiety, and



confusion, as well as ardent enthusiasm. There are myths and fears about the apparent abandonment of pencil and paper, the "heresy" of machines in a humanities classroom, etc. Teachers appropriately have concerns and questions about the use of educational technology in the teaching of writing, just as they continue to question and learn about process models of instruction.

But, along with our growing understanding of the writing process, the computer is going to be a permanent fixture in the classroom (as well as the home and business). Teachers need to learn about this new tool for writing—for several reasons.

Philosophically, as teachers in the humanities and sciences, concerned with the development of balanced and thoughtful human beings, we must bring our values, and our perspectives to this technological age. As models for our students, we cannot afford to function in a knowledge vacuum.

As writers ourselves, we need to experience this new tool, experience for ourselves the liberation from the tedium of recopying and re-typing, the ease of revision and editing in transient screen text, the simplicity of generating printed drafts for audience response.

And finally, as professionals, as teachers of language arts and users of language as the vehicle for teaching all other subjects, we can no longer remain ignorant of the power and capabilities of this

"language machine." Its mere presence in the classroom can de-center the traditional teacher-centered secondary classroom in ways that can empower students to become more autonomous learners, to actively participate in their own learning by using their own language.

There are many ways that computers are used in classrooms today to teach writing, including various drill/practice, and tutorial software packages. But the computer capacity with the greatest classroom potential for writing is word processing. It is this "writing on the computer" that best enhances a writer's natural processes of invention, composition, and revision. And, word processing, already the norm in business and professional writing, is fast becoming the norm in schools. The future is here. Now.

Although these two revolutions have turned many of our ideas about writing and teaching upside down, there is no denying how much we, and our students, have gained in the upheaval. As the teachers in this project have discovered, the writing process and the microcomputer go hand in hand, making writing the enjoyable, empowering, productive, and satisfying activity it can and should be.

These two revolutions are most definitely worth joining, and we invite you to do so.

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The Beginning . . .  
questions and qualms.

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Initial entries from project journals,  
September, 1984

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*When am I going to get over the fear of the computer and consider it a challenge, interesting? Why is everything related to the technology and the mechanics so much, so fast? Why are we all so fearful? Why, when we talk, do we finally discover we all have the same fears, questions, doubts? Why do I know the kids will find this much easier? Why do I know if I present them with the problem, they will solve it? Why does writing help us think? Why do I love journals and logs? Why have I not been as fearful about this project as others seem to be? Why isn't fearful the right word?*

Alma Harris

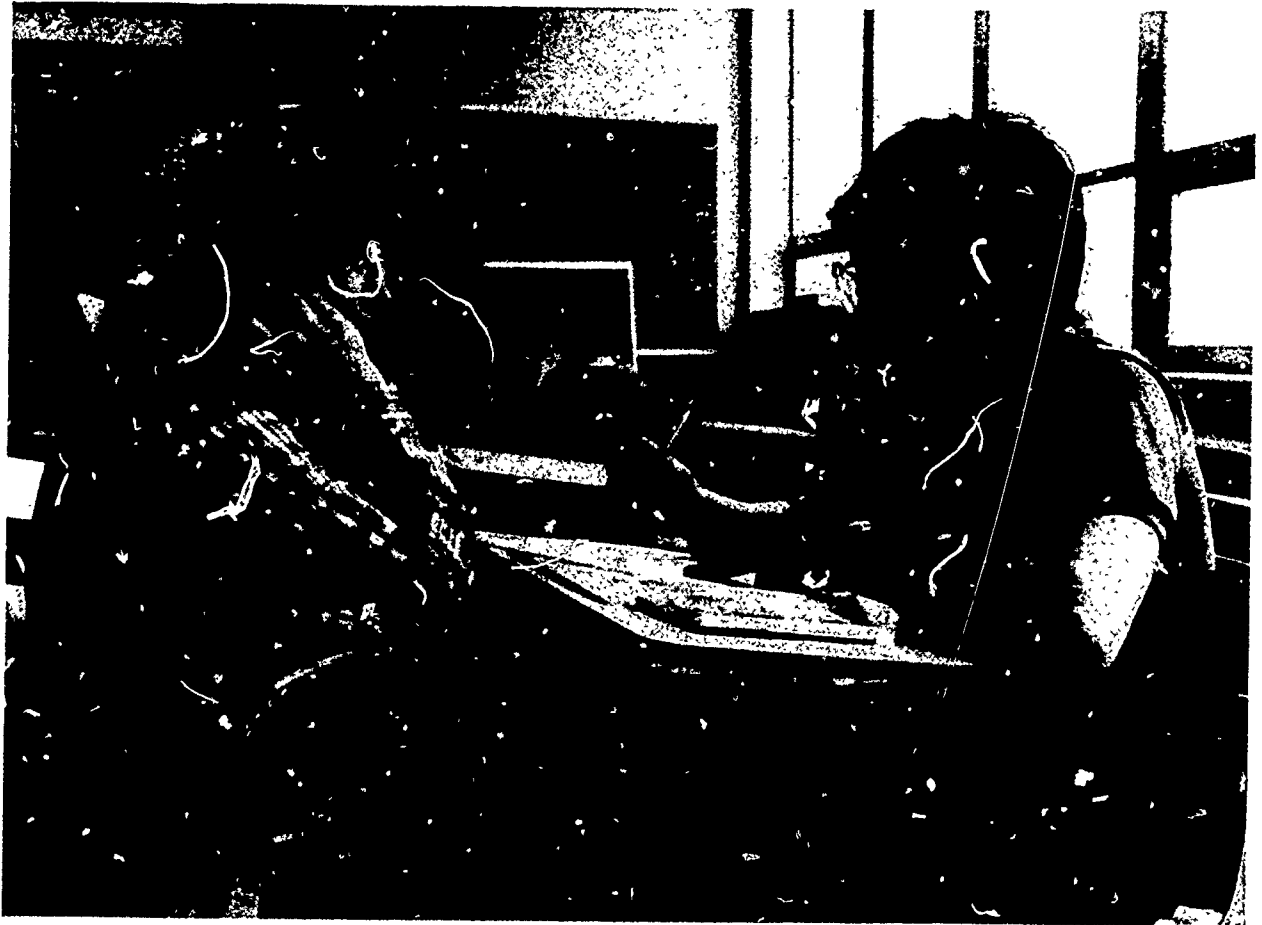
*Will using computers in the classroom, my classroom, ever make sense? Where will I start? Which direction will I go? Is my first concern with using the writing process in my classes, or incorporating the computer as a classroom tool, or teaching grammar or spelling, or providing a comfortable learning atmosphere which meshes with the middle school philosophy?*

Nancy Thomas

*Why do I want to drop out of this project? Why do I keep on? Why am I 100% involved and committed to the process approach, yet so fearful of the computer end of it? Why can't I be a computer genius? Why can't I have more time with my computer? Why is this so frustrating?*

Linda Bischoff

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# CHAPTER ONE:

## The Writing Process

*When an event sticks you, stays with you long enough, it goes down deep into your well of memory, and the deeper it goes and the longer it lies there, the richer it becomes. It comes up finally, not as a single event, but as a cluster of thoughts and images and feelings, like a great tangle of seaweed.*

Stanley Kunitz, poet

*I write entirely to find out what I think and feel and know . . . images shimmer for me. Grammar is the piano I play by ear.*

Joan Didion, author

*A writer is not so much someone who has something to say and the skill to enable the saying, as a writer is someone who has found a way into a process that will bring about things to say that never would have occurred if the process hadn't been entered.*

William Stafford, poet

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## What is the Traditional Approach To Teaching Writing?

The traditional approach to writing instruction centers primarily on writing as a *product*. So, in the classroom, the chief concerns become the features of writing products: *form* (five paragraph themes, topic sentence paragraphs, persuasive, descriptive, comparison/contrast essays, etc) and *correctness* (punctuation, spelling, grammar.) In order to focus on these concerns, the teacher provides drill work on specific skills, and makes many of the major writing decisions for the students: it is usually the teacher who chooses the topic, determines the form and length, and serves as sole audience and judge. The traditional writing classroom is product-focused, and teacher-centered. Writing is viewed (often unconsciously) as some combination of social graces and job skills.

In this context, "learning to write" is essentially an exercise in following the rules, conforming to formulas, and trying to figure out what the teacher wants to hear. "Learning to write" means learning to edit; it means acquiring technical mastery of formal conventions and modes; it means primarily attending to the etiquette and decorum, the "good manners" of written language. The teacher's role is to define forms, enforce the "good manners" of mechanical correctness, and identify errors.

Typically, a student receives the assignment (topic, type, form and length of writing determined by the teacher), and works alone on the task until the final paper is turned in. While struggling to figure out what s/he wants to say, the student is reminded not to write fragments and run-ons, and to include topic sentences. The student interacts with the teacher about the writing only to ask, "Is this what you want?" Opinions of other students are not particularly sought, because ultimately they do not count. It is the teacher that must be pleased.

As much as possible, the student writer attempts to get it all right the first time through (the "quick-dry cement" syndrome), so as to avoid the mess and tedium of revising and re-copying, and turns in the assignment, final copy only. The teacher (the first and only audience), seeing the whole piece for the first time, grades this final copy by diligently

and painstakingly marking every mechanical error in red ink, and writing notes in the margins about what else is "Good!" or "Awkward!" or "Too vague!" or "Confusing!" about the piece.

The graded work is given back to the student who may or may not pay much attention to the teacher comments, and who, likely as not, airplanes the work into the nearest trash can since all the notes and the markings are about work that's over and, thankfully, done with. There isn't much of a sense of ownership or investment in the writing.

A grim, and perhaps exaggerated scenario, to be sure, but with many grains of painful truth. The emphasis: final product, proper form, mechanical correctness, and the teacher's agenda. The result: some students learn to write. However, many, many do not, and many, many find writing to be a painful, pointless exercise in frustration, anxiety and repeated failure. Teachers, too, are frustrated, wondering why their well-intentioned, extensive efforts—both in skill drills and paper grading—result in so little measurable improvement in the writing itself, or in student attitudes toward writing.



# Why Isn't the Traditional Approach Effective?

The traditional approach is not effective because:

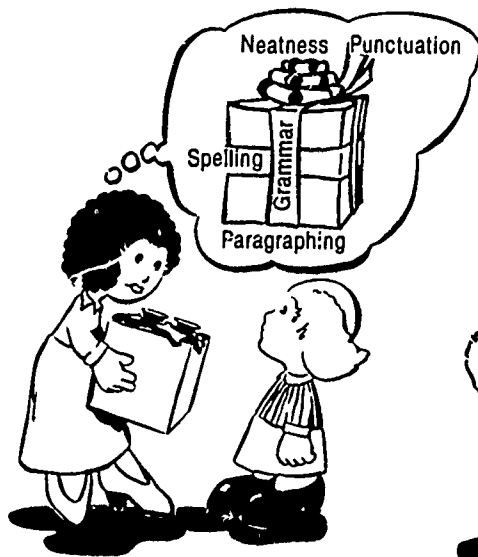
- It emphasizes form and mechanics before, and —often— at the expense of, ideas and meaning. This is not how real writers write. Real writers grapple first with their thoughts, letting the content, the audience, and the purpose for writing determine the form. Correctness is attended to only as a *refinement* of shaping ideas. Current research has shown that focusing on correctness too soon in the writing process—premature editing—is the biggest single block to remedial writers. Writing is not just a motor skill, as psychologist Vygotsky tells us. It is the symbolic transformation of thought into language. (1978, p.106).
- It focuses on the product rather than process. This is often because that is how teachers have been trained. Their backgrounds are in reading or literature, which emphasizes analysis of written *products*, not the process by which the writing was created. From the perspective of literary analysis, issues of style, genre, and correctness are understandably primary. However, that primacy is utterly inappropriate when writers are first discovering and shaping their ideas.

- It seriously neglects the earliest stages of the writing process: the “priming of the pump”, the pulling up of images, thoughts and feelings from the subconscious, the talking, brainstorming, sharing, the strategies of invention that motivate and invite students to write.

- It offers too many artificial contexts for writing (formula assignments), and artificial audiences (the teacher). Students need to have meaningful reasons to write about their own topics with their own intentions, for *real audiences*. Students need to be at the center of their own writing experience.

- It isolates mechanical skills from the context of writing. Punctuating a page of workbook sentences is not the same as finding the sentence sense in one's own writing. Such skills transfer minimally at best. They are most effectively learned when the writer is genuinely involved in his/her piece, and *needs and wants to have that skill at that moment*.

- Rather than being an outgrowth of research and experimentation, the traditional approach is based on the sheer historical momentum of outmoded theoretical assumptions. Teachers unconsciously operating on these unexamined assumptions teach the way they were taught, using textbooks based on the same assumptions.



When a teacher asks a developing young writer to focus on the “wrappings and ribbons” of the writing package . . .



before the writer has had a chance to fully explore what she wants to say . . .



writing becomes unnecessarily difficult, a tangle of conflicting tasks.

# What Are the "Outmoded" Theoretic Assumptions the Traditional Approach is Based Upon?

## How Have These Changed?

**OUTMODED ASSUMPTION #1:** Competent writers always know what they are going to say before they write it down. When they start a piece of writing they always know exactly how it will end.

The assumption is: knowledge is pre-conceived; fully formed ideas always exist before they are expressed in language. Therefore, if finished thoughts are already in the head of a competent writer, his or her main task is to organize those thoughts in the mechanically correct form. Instruction therefore focuses on form and correctness: grammar drills, write-by number formulas, topic sentences, etc.

The message to students is: "Here is the package: five paragraphs with topic sentences. Outline before you write, punctuate correctly, write legibly, and your ideas will somehow, magically, take care of themselves. The form and the correctness are the important things."

**UPDATE:** This assumption ignores the fact that writing is an intellectual activity of the highest order, reflecting the deepest structures of human thought: generalizing, classifying, conceptualizing. Writing actually enables thinking, and knowing. It generates knowledge, it precipitates ideas. It is one very important way of coming to know what we know.

"How do I know what I think until I see what I said?" wrote E.M. Forster. "I don't know what's going to happen until I sit down at the typewriter and find out," said James Thurber, when interviewed about his writing process. (Emig, 1983, p.17.) "How can I outline what I haven't written yet?" bellows the frustrated student.

Some writers can plan, and outline before they write. Many writers, on the other hand, write to find out what they have to say, and then plan and organize. The process of discovery in writing is highly idiosyncratic. We

should expose students to a variety of strategies, not mandate certain kinds in lock-step rigidity.

Writing is rooted in the subconscious as well as the conscious mind. Writers usually *don't* know all of what they're going to say before it's written. It is *in the act of writing* that they discover and make their own meanings, that they find personal significance in their experience of the world. Knowledge must be discovered before it can be shaped. So, writing instruction must provide an environment in which this evolving of ideas, of knowledge, is not constricted and hampered by premature concern for correctness.

As C.H. Knoblauch and Lil Brannon describe it in their book, *Rhetorical Traditions and the Teaching of Writing*, encumbering the early discovery stages of the writing process with demands for proper form and mechanics is like insisting on perfect table manners before there's any food to eat. It makes writing "pointlessly difficult—like learning to play tennis in leg chains. One might learn to play tennis eventually, but it is perverse to credit the chains for the accomplishment." (1984 p.47)

**OUTMODED ASSUMPTION #2:** The writing process is neat, linear, and sequential. It proceeds methodically from preparation to writing to re-writing.

Some textbooks (and teachers!) would have students believing that writing is simply a process of deciding what to write, writing it, checking it for coherence, proofreading for mechanical mistakes, and voila! it's done. One simply goes from start to finish, following the steps, from left to right. A clean, conscious, antiseptic act.

**UPDATE:** Recent research in the composing process (through analysis of oral composing, interviews with writers, close studies of revising behaviors, rough drafts, etc) has shown

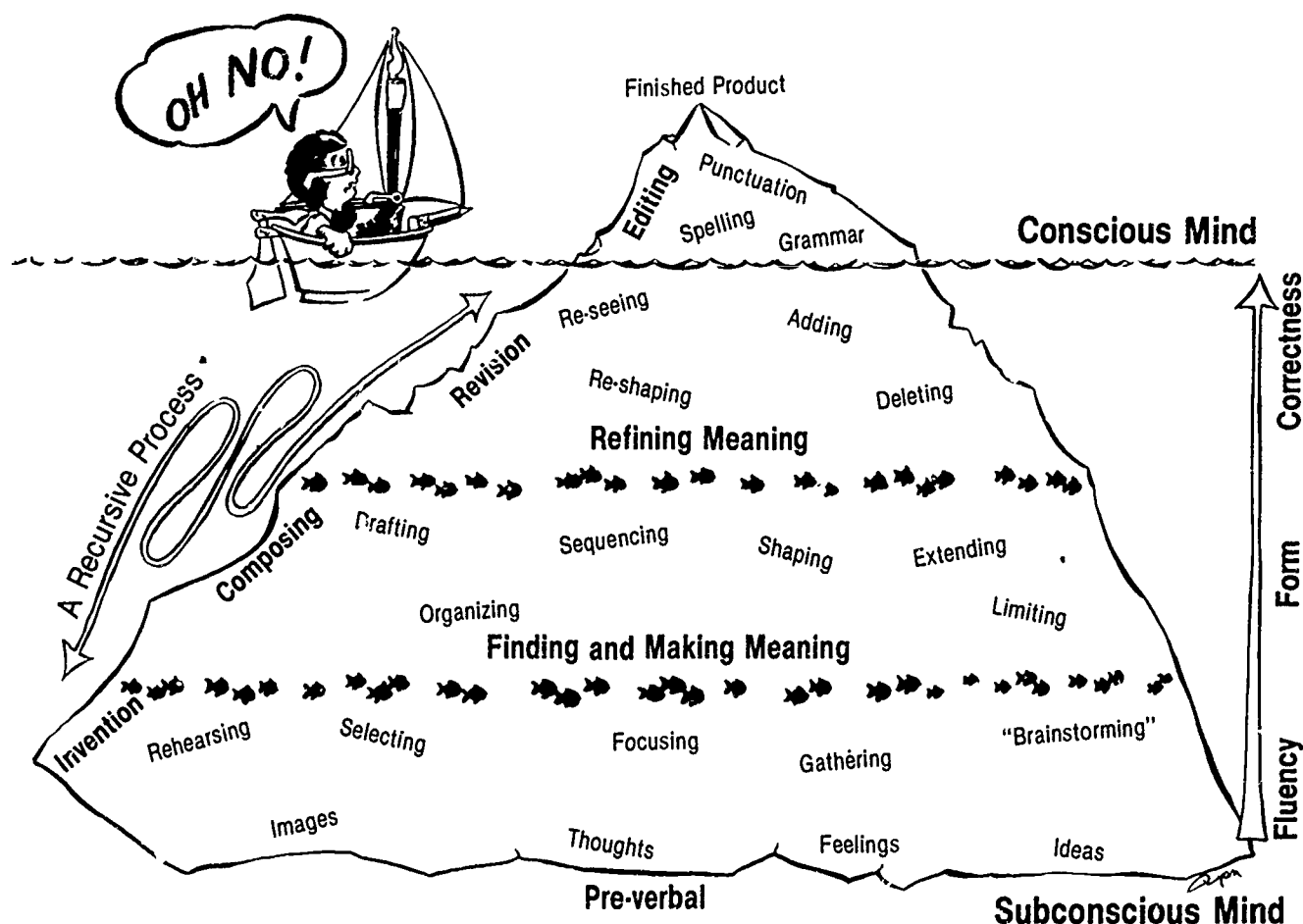


that the writing process is anything but neat, tidy, straightforward, and predictable. "Most writers have only a partial notion of what they want to say when they begin to write, and their ideas develop in the process of writing," explained Professor Maxine Hairston in a recent article. "(Writers) develop their topics intuitively, not methodically . . . The writing process . . . is messy, recursive, convoluted, and uneven. Writers write, plan, revise, anticipate and review throughout the writing process, moving back and forth without any apparent plan." (1982)

"Writing involves commerce with the unconscious self," writes researcher Janet Emig. It can therefore be a "sloppy and inefficient procedure for even the most disciplined and

long-writing of professional authors." (1983, p.48)

Writing instruction must allow for the "messiness" and surprises that accompany the writing process, because it is only through exploring and experimenting that writers can eventually come to honesty, precision, and clarity. Insisting on rigid sequences and predetermined steps is placing artificial constraints on a complex intellectual process. The capacity to make meaning is innate to human beings; it is not something teachers can give to students. We can only nurture and foster it—or impede it with pointless restrictions. As teachers of writing, *we must return the experience, the ownership, and the power of the writing process to the student.*



How many student "Titantics" try to avoid writing? How many have repeatedly wrecked on the jagged edges of "editing," because that's all they believed writing to be? A premature emphasis on product, form, and correctness masks and seriously impedes the engaging process of discovery that writing can be.

# What Does Current Research Tell Us About the Writing Process?

Research in clinical and cognitive psychology, anthropology, linguistics, and composition, as well as classroom-based studies conducted by practicing teachers have identified several features of the writing process.

**Writing is a complex, cognitive process of discovery.**

It is a product of the conscious and the subconscious mind, so writers don't always know where their writing will lead them. Both intuition and reasoning are called upon, and in the process, intended meanings unearth new meanings. A writer might start out describing family traditions and end up on a tangent about Grandma's hair-trigger temper. An early draft is for allowing such tangents to indicate where a piece could lead—such “errors” can be options for texts that are emerging, or indicate a developing writer's abilities.

Ideas evolve, by and in the act of writing—an act of exploration and discovery. (This feature of writing is particularly pertinent to content area learning: by writing freely about new information *in their own language* students can start to make sense of it—make those critical connections between old and new experience, and discover what they know, what they do and do not understand.)

**Writing is a recursive process, not linear.**

The various component operations of writing—generating and conceiving information, planning, composing, revising, editing—are not neatly ordered and sequential. Sometimes they can't even be separated. Rather, they energize and trigger each other in an oscillating, back-and-forth fashion. Composing one sentence may invite a revision—which creates a new idea—which then demands new planning for the sentence itself, as well as the whole piece! Dr. Sondra Perl, a writing researcher, describes the composing process as “retrospective structuring,” where “movement forward occurs only after one has reached back, which in turn occurs only after one has some sense of where one wants to go.” (1979, p.18)



When students are first creating whole texts, we do sometimes deliberately talk about writing in linear stages, separated in time. For example, we might reassure developing writers that it's appropriate to write quickly at first, saving revising and editing for later. They don't have to do everything at once. This is very freeing, and helps build confidence and fluency. However, as a cognitive process, recent studies by Flower and Hayes (1981) and others are showing us that all composing operations are intertwined and embedded in each other: even during an initial "fast-write" a student could be reviewing, revising, planning, and editing.

**Writing is a social process, dynamic and interactive.**

Writing is first and foremost about communication. Writers are not only communicating with an audience, but they are also interacting with themselves, and their ideas. They talk to themselves as writers *and* readers, as they write. They constantly backtrack, re-read, now listening as a reader, now re-seeing as an author. They constantly shift between being "passion-hot and critic-cold," as writing researcher Lucy Calkins quotes poet John Ciardi. (1983, page 71.)

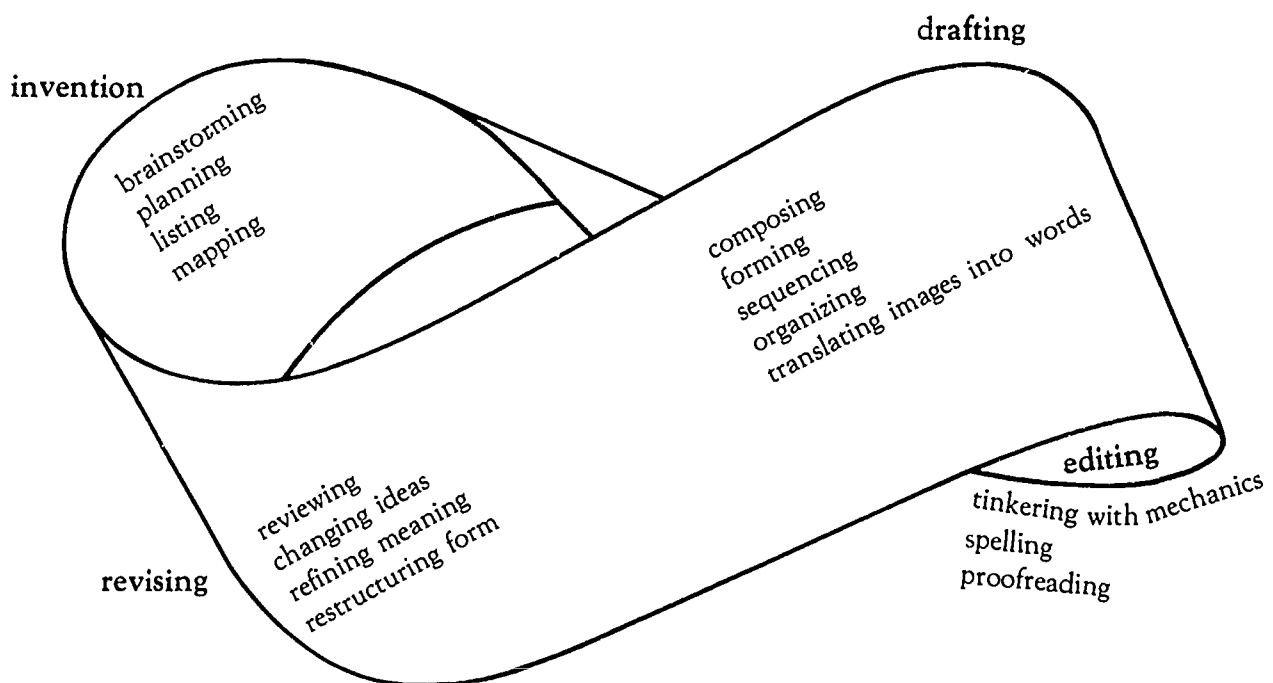
Writing is for sharing and publishing. Writing is about making meaning and then conveying it

to someone else. Internalizing a sense of audience is one of the most significant leaps a developing writer can make toward the improvement of his/her writing. *Real* audiences (not the teacher-as-grader) make this possible.

**Writing is a process of making decisions, and solving problems.**

During the process of composing, the writer has to search long-term memory, and select pieces of information to be arranged and transformed in short-term memory. The feelings and images have to be translated into language, while the writer repeatedly reviews and re-reads what has been written so far, so as to decide what to do next. A tension may arise between what is intended, and what actually exists on the page. This impells revising ideas and language to resolve the felt discrepancy.

And so it goes. Throughout the creation of a text, a writer is constantly sensing problems, and making decisions about how to solve them. As writers develop, they base their decisions more and more on the needs of audiences, on the function and purpose for their writing. Writers who are conscious of, and confident in, their decision-making are able to take charge of their own processes, and become more self-reliant.



Like a mobius strip, the writing process folds in on itself in a recursive fashion.

# How Does This Knowledge of the Writing Process Translate to the Classroom?

Research has shown that teaching models which foster, encourage, and contribute to the *process* of writing are far more effective in terms of creating confident, productive, and skilled writers, than the more traditional product-centered models. From the experience of successful classroom teachers, and classroom-based researchers come the following recommendations:

## **Make the classroom a safe place for writing.**

Hold off on the red pencil during the early stages of writing. Focus on establishing fluency, confidence, and comfort first. In early drafts respond *first* to a student's ideas, not mechanical errors. Encourage the writer to get the thoughts down, revise for meaning, and then work on correctness. (Students who feel good about initial efforts will be much more receptive to issues of form and correctness later on.)

Train students to respond positively and constructively to each other's writing. Insist that respect be shown for an author's efforts.

Give students lots of practice in listening carefully to each other's work, and "receiving" it—that is, reflecting back to the author what was "heard," "seen," or "felt." (Eg. "In your writing, I saw you sitting in a hot steamy car, waiting impatiently for your friend.") Then have students respond positively to specific things they liked about the piece, and then ask helpful constructive questions.

Listen, listen, listen. Ask questions that show interest in the student, and what s/he is trying to say. Let the writer be in charge, choose the topic, and lead the way in discussions about his/her writing.

## **Create a writing workshop environment.**

Encourage collaboration and sharing of work-in-progress.

Have students maintain writing folders, which hold current and finished writings, list of possible topics, skills checklists, personal spelling lists for troublesome words.

Establish consistent procedures for getting help with problems, during writing time. Have dictionaries, grammar handbooks available as resources.

Conduct mini-lessons on specific problems as they emerge. Teach mechanical skills in the context of the student's writing.

As Donald Graves, writing researcher, explained in a recent interview: "(Drill exercises) say, Let's just do rote functions. Well, damn it all, I don't think rote functions ever belong out of the context of the piece. That is, the place I'm going to teach you punctuation is in the midst of your piece. That's where you'll learn it. If you want to learn organization, I'll teach you organization in the midst of your piece. There's no transfer with a whole pile of organization 'exercises.' Never will be." (Green, 1984, p.28)

Model by writing along with students, sharing work, getting response.

Appoint students as resident experts in certain kinds of punctuation, spelling, paragraphing, etc. to help each other with editing and proofreading.

## **Deliberately make the process a part of all writing activities.**

*Talk about the writing process.* Have students interview each other as to their idiosyncracies, needs for special tools, environments, etc. Help students become conscious of their own writing processes.

Allow plenty of time for invention/"pre-writing" activities: oral language, lists, mapping, brainstorming. Prime the pump, with a "room full of talk and a head full of ideas."

Value and dignify rough drafts as an important part of discovering what one knows about a topic. Welcome rough drafts that *are* rough: messy, tentative, half-baked, changeable. Give as much credit for early drafts as final drafts. Insist that any final drafts turned in for grading or response be accompanied by rough drafts.

Have a "rough draft of the week" for students to look at—chosen from student work, illustrating the necessary messiness and changes that revising entails. Model the need and use for rough drafts in your own writing. Do collective revising of texts on the overhead projector, with the whole class.

Use process vocabulary when talking to students about their writing: "Where are you in your draft?" "What prompted your revision of that section?" "Maybe some listing would help you get started."

"Can you think of an alternative lead you could use?" "After you edit this piece, it will be ready to publish!"

*Hold students strictly accountable for correctness in final drafts.*

**Shift the teacher role from director-evaluator-judge to collaborator-coach-partner.**

Become a participant in the process. Respond to writing as an interested audience, as a writing partner, rather than a red pencil grader.

Assist students in finding their *own* intentions, their *own* topics. Students must have ownership of the writing, in order to invest the energy into it that good writing demands. Meaningful writing is much easier to transform into "correct" writing.

Resist the temptation to solve their problems, and make their decisions. The writing must belong to them—the struggles as well as the discoveries and the satisfactions.

Write yourself: rediscover how messy, unpredictable, difficult and satisfying writing can be. *Know*

first-hand what the process is like. Speak from *inside* the process. Your response to student writing will be much, much more helpful.

**Emphasize writing as communication to an audience.**

Train students to receive, question, respond to writing.

Have students work often in pairs, trios, small response groups, reading their work aloud.

Avoid "dummy runs": assignments with no meaningful purpose and no real audience.

Widen the audience: include the community, parents, other students—not just the teacher. Encourage writing as a social, collaborative act.

**PUBLISH, PUBLISH, PUBLISH.** Bombard students with their own words, their own language: booklets, wall hangings, oral readings to the group of student work, "rare book shelf" in the library of works by student authors. Frequent publication is a powerful motivator for producing correct, quality writing.





## HOT TOPIC

### The Process in the Classroom

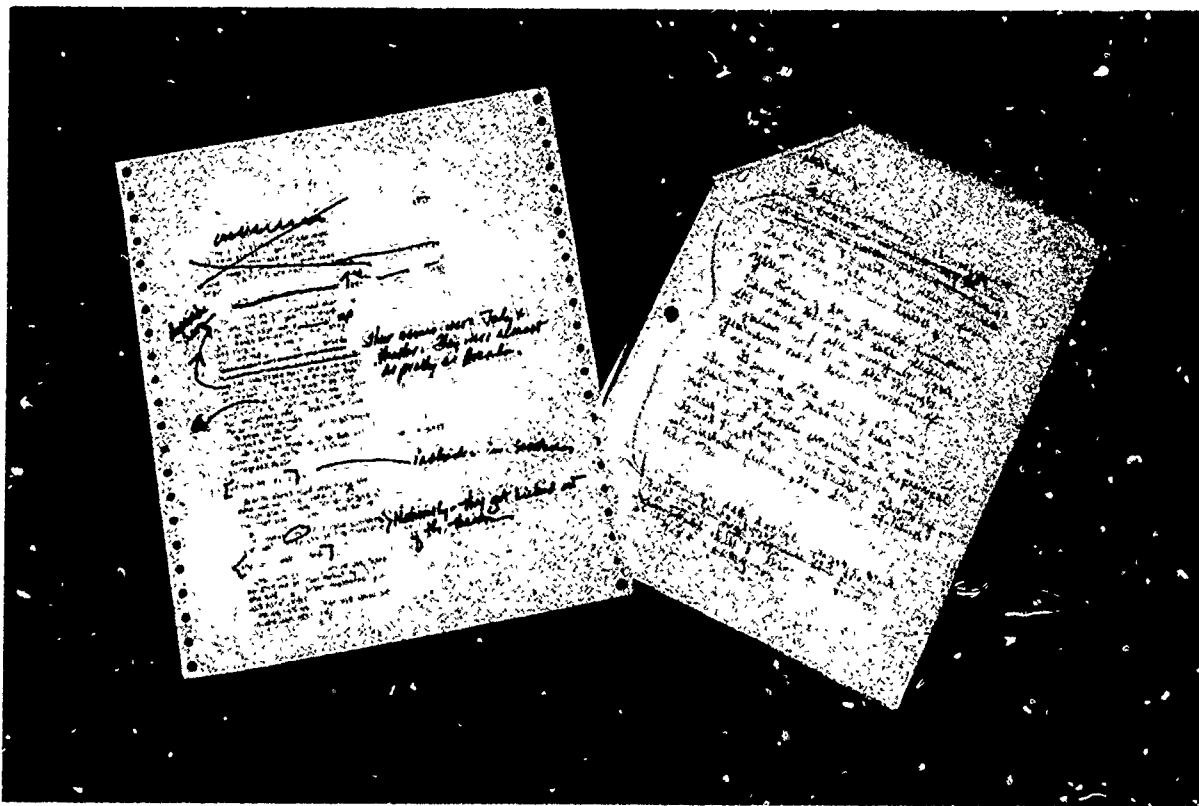
The Alaska State Writing Consortium Summer Institute was the most beneficial course I have ever taken in relation to my teaching—because it was such an energizer. It generated such enthusiasm in me for writing that I guess it was contagious. I showed me the process, and the process works. Absolutely. The idea of the teacher writing along with the students as a model, completely broke down their usual reluctance to read and share their writing . . . the accepting of what anyone wrote . . . the way they learned to really listen and question helpfully . . . My kids became champs at responding to writing . . .

Even with all the personality quirks in the class they were still so kind, so helpful. Even with the worst, most confusing writing, the kids would respond, "You know, it isn't really clear, what you're saying. I'd like to understand it better." And the student would go back and re-write!

The oral reading of their pieces aloud to each other did wonders for them in being able to pick up on missing things . . . giant chunks of thought that they'd need to add or change . . .

They felt more and more comfortable sharing their writing, and more and more comfortable with the idea that they had things worth writing about. As their confidence grew, so did their willingness to write more, and write better.

Didi Ryall, describing  
her eighth grade  
special ed students



## FROM THE CLASSROOM

Nancy Thomas

Nancy Thomas teaches language arts and reading in a four-teacher team at Marie Drake Middle School. Originally from northern Minnesota, she has taught in Alaska for five years. In 1984, Nancy attended the Alaska State Writing Consortium Summer Institute in Juneau, and has enthusiastically applied what she learned there ever since—as this project clearly shows. Her M.A. in Counseling, and subsequent work in that field, give her a unique perspective on the significant changes in attitude and self-esteem she observed in her students, as they began to see themselves as writers.



### WRITING SKILLS/WORD PROCESSING ACTIVITY: "SHOWING" WRITING

**Objective:** The students will be able to create examples of "showing writing" using the Bank Street Writer word processing program.

**Teacher:** Nancy Thomas

**School:** Marie Drake Middle School

**Grade:** 7

**Number of Students:** Four classes of 28-33

**Subject:** Language Arts

**Length of Activity:** 10-15 days

**Computer Access:** Computer lab/one classroom computer (Apple IIe)

**Word Processor:** Bank Street Writer

**Writing Process Emphasis:**

- ☐ Fluency
- ☐ Drafting
- ☐ Responding
- ☐ Revising
- ☐ Editing
- ☐ Publishing
- ☒ Entire Process

#### Word Processing Training Procedure:

Due to the flexibility of middle school teaming, I was able to take each of my four language arts classes to our computer lab. We have fourteen computers so that the ratio was about two students per computer. The students would only have use of the lab for one period however. In the classroom, we had one computer.

Prior to actually going to the lab, each class spent about half an hour discussing handouts from the Bank Street Writer Activity Book: (Scholastic, Inc. publication) "Meet the Bank Street Writer" and "The Writer's Three Modes."

In the lab I went over rules for using the computer, parts of the computer, and Bank Street Writer. After booting all the computers with one copy of Bank Street Writer, the kids were free to enter text and explore the three modes. I roamed around asking questions like, "Is there a way you could erase that word without going to the edit mode?" or "What would you do if you wanted to print what you just wrote?"

Back in the classroom we discussed what we had discovered and reviewed again what the possibilities were in each mode. This is the total time I spent formally training the students as a group in word processing.

#### Writing Assignment Procedure:

##### Overview: "Showing Writing"

Last summer during the Alaska State Writing Consortium Summer Institute, one of the writing activities that was the most fun for me also taught me the most about descriptive writing: "showing, not telling writing." This is a series of exercises based on Rebecca Caplan's book *Showing Writing* published by the Bay Area

Writing Project. She believes that students become better writers if they train to write on a daily basis and practice being specific and selective with their words. In order to establish the difference between showing and telling writing, Caplan shares examples of good showing writing with her students and then has them expand telling sentences into showing sentences on a regular basis. I followed this procedure, with the addition of having the assignments published on the computer to be shared with others in the class, and assigning a final illustrated example of showing writing.

#### Procedure:

To begin the showing writing unit I read "Messy Room" from Shel Silverstein's book *Where the Sidewalk Ends*. We discussed showing sentences in the poem and then brainstormed more showing sentences on the board. Next, the kids began their own rough drafts of a paper called "My Messy Room." One student was selected to write at the computer.

The second day was spent in revision. The students read aloud their work to another student to revise, clarify, and explain the meaning of their pieces. Whatever could not be visualized or understood was worked on. The student at the computer did the same with a partner.

On day three, I collected the revised copies and chose about seven in each class to read. We evaluated these together discussing what was really descriptive and detailed and what was still unclear. I recorded points in my grade book for their rough drafts. The homework was to begin to edit their work.

On day four we read examples of published writers' showing writing. I put these examples on the overhead projector and we picked out descriptive words and phrases. I also allowed some class time for editing.

The fifth day was spent in groups of three or four writing ten showing sentences about a telling statement. Before breaking into the groups we did an example with the whole class. "The animal was dangerous" generated sentences like, "Blood dripped off of his fangs as he looked around to attack again." (middle school kids love this stuff!) One of the groups of three used the computer during this activity. The telling sentences that I gave each group was to be a secret to all the other groups. At the end of the period the groups read their showing sentences to see if the class could guess what their telling sentence was.

On the sixth day, I handed out a worksheet with ten telling sentences on it. The task was to write two showing sentences for each telling sentence. Next, the student was to choose one of the telling sentences as his/her topic for an illustrated writing project. In the example of "The bus was noisy" the student drew a bus with the telling statement inside and organized the showing sentence around it. The group at the computer on this day was working with the same assignment, except that I had put it on a working disk for them to use after they had booted the computer with Bank Street Writer. I used the same instructions, but had left space for them to type their showing sentences right on the screen. They printed out their sentences for sharing.

The seventh day the students wrote a showing paragraph based on the telling statement: "I am/ am not a typical teenager." "'Show' me which statement best fits you," I told them.

On the eighth day the writing assignment was to write on "She/he has a good personality." Again one student was at the computer.

The ninth day was a learning log entry, using showing writing to discuss teachers, and the tenth day entry was "Showing writing is a good way to write!"

The entire unit was quite successful: their descriptive writing markedly improved, and students enjoyed the writing. They took great pride in sharing what they wrote.

Handout used on day six  
(also on disk for computer user)

#### Telling/Showing Sentences

Write two showing sentences for each telling sentence.

Example: He was afraid.

The pale trembling child shook as he  
stuttered the answer.

The room is a mess.

Every inch of the stained carpet was littered with papers, soiled laundry, leftover meals and debris from weeks of careless living.

1. The playground is wet.
2. The teacher was angry.
3. He is nice.
4. The desk is a mess.
5. She is very rich.
6. The bus was noisy.
7. She is strange.
8. He was a brat.
9. She is beautiful.
10. The book was good.

Large/Whole Group Response Sheet

AUTHOR'S NAME \_\_\_\_\_

STRENGTHS OF THE PIECE: What did I like best? What sounded pleasing? What words really "showed?"

THINGS FOR FIX-UP: Suggestions to make the piece better.



# The Frosting On The Cake

By Nancy Thomas

As I look back at this unit, and re-read the first pages of my journal, I realize how much I have benefited by taking the risk to try something new in my classroom. Not only do I now feel comfortable using a computer as a writing tool, I feel as though it has become a part of the writing process itself. The use of the computer in writing has motivated my students to write, has provided a handy publishing tool, and eventually, became a way of editing written material for students who would not otherwise bother.

But it was the process approach as well as the computers that really grabbed the reluctant writers. They wouldn't have gone over to the computer anymore than they would have written, if they hadn't had the chance to feel good, to feel capable, to not feel criticized for trying. They were feeling: "It's okay to write in here, nobody is going to cut me down, what I say has value." If that safety zone hadn't existed, there is no way they would have even turned on the computer and tried to write there, either.

To me, the process approach to teaching writing is a kind of active listening. You really **listen** to what students are saying when they write. You allow them to share a part of themselves with you, and you are genuinely interested in what they have to say. It's suspending judgement as a way to allow them to explore what they know. Along the way, of course, skills that need to be taught are being taught, but it's a process of getting to know each student: just listening without criticizing or correcting at the early stages of the writing.

As my students found out they could write, they discovered new insights about themselves, new ways of seeing others. I think this discovery carried over into other subjects, too. Their new-found confidence enabled former non-writers to participate in a major geography project our team was involved in. I have seen one student grow from a silent, sullen non-writer to an excited, cooperative author who can't wait to get his name on the sign-up sheet for computer writing. I've seen another student taking pride in his writing for the first time in his life, since his illegible handwriting has previously made him ashamed and unwilling to write at all.

The whole process focus makes such a difference. Worrying less about correctness in early drafts, valuing those drafts as places to experiment—those things gave the students the confidence to do more and try more. I imagine that in the past, their papers were just red-marked to death, and that was basically all the response they ever received—understandably discouraging! Encouraging the process gave students the courage to try writing, and using the computer gave them the ability to easily create professional-looking final products, a terrific incentive.

So, for me, the biggest shift in my teaching has been using the process model of instruction. It set the tone, and created the possibilities. The computer was just the frosting on the cake, but a very enticing frosting, indeed.

## FROM THE CLASSROOM

Linda Bischoff

Linda Bischoff has the relatively unusual distinction of being born in Alaska. She has taught English in junior high school for nine years, but this year she moved to Juneau-Douglas High School, where she now teaches seniors and freshman. Her post-graduate studies have been in English and psychology.

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## WRITING SKILLS/WORD PROCESSING ACTIVITY: SENTENCE COMBINING

**Objective:** To combine language awareness activities (sentence combining) with basic word processing commands (entry level).

**Teacher:** Linda Bischoff

**School:** Juneau-Douglas High

**Grade:** 9

**Number of Students:** 25

**Subject:** Language Arts

**Length of Activity:** 3-4 weeks

**Computer Access:** Computer lab of 7 computers (Apple IIe)

**Word Processor:** AppleWriter

**Writing Process Emphasis:**

- ☒ Fluency
- ☒ Drafting
- ☒ Responding
- ☒ Revising
- ☐ Editing
- ☐ Publishing
- ☐ Entire Process

### Word Processing Training Procedure:

My pre-training survey indicated very few of the students had any computer experience. Students requested partners for computer pairing. The class was divided into two large groups of 14 or so, and students were paired within those groups, based on their requests (and my judgement!) One group would be in the lab, while the other group worked on a separate book review assignment, with the same due date as the computer work.

In the classroom, both groups were given a brief overview of basic computer and disk care. Each student was given a basic Command Sheet—a condensed list of basic word processing commands for Applewriter. The first group worked in the lab for a week and a half, until they were finished, and then switched with the second group, which was working in the adjacent library.

In the lab, after reviewing hardware and disk care, we went through the Command Sheet together. Then I gave the students a dittoed practice paragraph full of deliberate errors in spelling, word omissions, etc. (see page 80) which the students were to type onto the screen, exactly as given, and then go back and correct, using word processing commands. They were working at their own pace, on a trial and error basis, helping each other. I only intervened when it was apparent they couldn't solve the problem. (This worked very, very well!) This was all the specific training they received on the word processor, and it was all they needed!

### Writing Assignment Procedure:

Prior to this unit, students had worked on the following skills: capitalization, punctuation, sentence sense (run-ons/fragments) and transitions. This sentence combining unit incorporated these skills with paragraph building.

Students were given a handout which listed six pairs of sentences. The objective was to re-write the sentences, exploring different ways of combining the ideas and the language. Words could be added or deleted. Students were able to work as a team on the assignment or individually.

Example: I was heading home in my beat up car. The night was pitch black.

Student sentence: As I was driving home in my beat up, trashed car, I could hardly see through the rain in the pitch black night.

After this assignment, the students worked on a second handout that was similar in format, but included longer, more sophisticated sentences. After the successful completion of both sheets, the students could write original paragraphs on subjects of their choice.

Students could make as many drafts as they wished of the assignments, with as much help from their partners in revising and editing as they needed. Final evaluation was based on the completion of the assignment, mastery of punctuation and capitalization skills, and in addition to this, they were given a grade for their participation and effort.

The sentence combining work resulted in a marked improvement in the length and variety of student-written sentences. Because it was so easy to literally move parts of the sentences around on the screen, students began to realize their own potential as crafters of language. They learned the value of revision, and actually began to enjoy it. They liked playing with the language, manipulating the words. They would have revised those ten or twenty sentences to death if time had allowed. Though I did not anticipate it, this assignment turned out to be a major, successful lesson in revision.

The final assignment was to write a brief letter to me on the word processor about their experience in the computer lab. In these letters, they all thanked me for the experience and asked for more! My two goals were reached: the students learned basic word processing skills and they discovered through sentence combining that writing can be an enjoyable, creative process.

# Taming the Monster

By Linda Bischoff

For ten years I have observed students reacting to writing as an unapproachable monster. After working with the writing process and the computer, I have begun to understand what the monster was, why it existed, and how to tame it.

The monster was the pain involved in the act of writing—the stumbling blocks, the anxiety, and the frustration. Especially the frustration. It began when the lesson was first assigned (my topics, not theirs) and it didn't end until the paper was placed on my desk. (I was the only audience for 90% of the assignments.) For the students, writing was about having to avoid a long list of evils, and somehow coming up with a perfect final product, that only I would read. It wasn't fun, it wasn't sharing, it wasn't tapping their creativity.

If the students survived, all that remained was to receive the graded papers, full of red marks and suggestions for improvement, but they were never given a chance to re-work their pieces. I just rushed them on to the next assignment, expecting them to learn and remember from all my laborious grading. The monster closed in on them.

I had many preconceived notions about writing instruction when I began teaching. I was very concerned with fitting lessons into a given time frame, the sacred class period, during which students had to be models of exemplary behavior. They were not to talk to one another. They were to write, but not verbally communicate with their peers. There was no sharing.

"Correctness" was another one of my priorities. I was emphasizing the finished product too soon, and not allowing them to become comfortable with mistakes during early stages, so they could concentrate on shaping their ideas. I rushed through "pre-writing" or warm-up activities that could have helped them focus on what they wanted to say. The students were given grammar, sentence structure, mechanics, and all the "sound" writing advice, but it was out of place, too much, too soon.

I hate to admit it, but I was feeding the monster.

After teaching a few years, going to workshops, reading professional journals, and some trial and error in my classroom, my teaching methods changed. I discovered the value of spending more

time on the "pre-writing," warm-up stage, rather than rushing to the final product. But the most valuable lesson I learned was that it was useful to allow students to work in response groups, that the world was not going to end if there wasn't total silence in my classroom. Widening a student's audience to a small group, and then to the large group, improved their writing, and alleviated a lot of fear and embarrassment for the students. It was sometimes hard at first, but they soon began to reap the rewards of constructive feedback from their peers.

I took many steps forward each year, but I still was not satisfied because I was searching for a method which would get an entire group involved in the writing process and above all, survive the process wanting to write more. The answer to my dilemma was a new teaching tool—the computer. I soon discovered that the writing/computer connection is a powerful one for many reasons.

Previously, I have observed students beginning to write, becoming frustrated, and tossing papers into the wastebasket because their work didn't look or sound good to them. However, I have seen this frustration disappear as I watched students composing on the computer screen. Somehow, once a student enters a supply of ideas onto a screen, a sense of ownership occurs, and changes begin to take place. The student becomes involved and interested in the work from its inception, resulting in a pride and confidence that encourages more effort.

Writing is communicating, first with the self, and then sharing with others. This is where the computer really fits in. Students have an immediate audience when they are composing on the computer screen. They may work individually, but group work happens very naturally and easily allowing more possibilities for creating and sharing ideas. Corrections are made with ease, and information can be saved and returned to later, instead of trying to force ideas and rush the final product. This allows for a more relaxed atmosphere, rather than an anxiety-producing one. The improved atmosphere facilitates more creativity which leads to more detailed work.

So, academically, the results of working with computers have been encouraging. The students showed a marked improvement in many areas, the predominant being the length of their work. In the classroom, students were often satisfied just doing the minimum, rushing through an assignment just to get it done, but in the lab they truly labored over their work, not satisfied with the minimum. There was more time spent on task and far less time spent on discipline issues, resulting in more instructional time both for the group and individuals.

But a major advantage of using the computers is that they reach beyond the strictly academic realm. The computer lab experience brought about a marked change in the dynamics of my entire class. The group developed a sense of community as they helped one another learn to operate the computers and compose stories. They were responding as active learners with computers, rather than

as the passive learners I'd seen before. That sense of community has lasted beyond our time with the computers.

I really believe every student benefited from the computer/writing unit. But before we started, I wasn't sure that would be the case, because I was so anxiety-ridden, I wasn't sure I would survive. In preparing to move my students from the classroom to the computer lab, my greatest problem was overcoming my own fears, which stemmed from the "novice syndrome."

Initially, I was afraid of not having enough computer training myself, but that first day in the lab with the students showed me that, with a minimum of training and a great deal of enthusiasm, any instructor can successfully take his or her teaching expertise to the computer. And the outcome can be powerful, because the computer, when used with the process approach, *does* help to tame the monster, very very effectively.







## CHAPTER TWO:

### Word

### Processing

*The computer enhances the communication functions of writing not only because it interacts with the writers, but also because it can carry out a variety of production activities. Writing on the computer means using the machine as a pencil, eraser, typewriter, printer, scissors, paste, copier, filing cabinet, memo pad, and post office. The computer is a language machine.*

Colette Daiute  
Writing and Computers, p xiv

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# How Are Computers Currently Being Used In the Teaching of Writing?

The explosion of educational technology in recent years has resulted in the availability of many software programs designed to develop writing skills. Computers are used in the following ways in writing classrooms:

1. **drill and practice:** electronic workbooks, grammar exercises, etc.
2. **tutorial:** interactive programs with prompts which stimulate some part of the writing process. (Sample prompts: "Choose one word that accurately describes the hero." "List three things the hero did that exemplify this trait.")
3. **text analysis:** screening for various features in the writing such as sentence length, syntax, grammar, slang usage, etc.
4. **simulations:** poem makers, story builders, follow-the-steps writing plans.
5. **writing:** word processing
6. **writing tools:** spelling checkers, footnote packages, dictionaries
7. **teacher tools:** authoring systems for designing tailor-made programs, electronic gradebook management.
8. **information organizing and retrieval:** databases ("electronic file cabinets")
9. **communications:** electronic mail, modems.

There is room for the judicious integration of

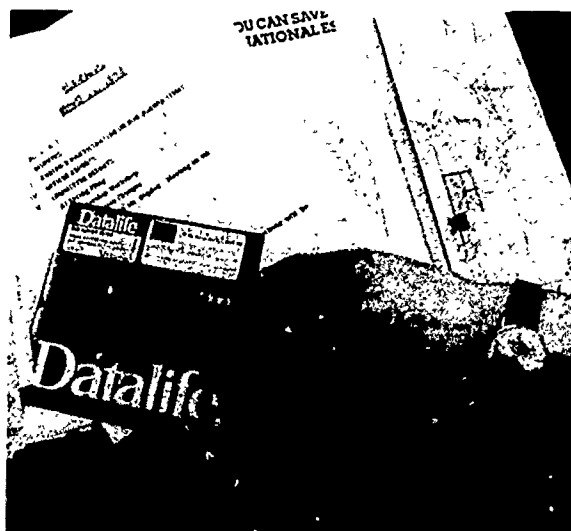
any of these computer uses into a process approach to writing instruction. For example, simulations like poem makers could serve as a confidence boosting invitation for students to write poetry, and play with language. Tutorials with prompts could help with invention, generating information to get writing started. Or, when certain mechanical problems have been identified in a student's writing, short shots of individualized computer drills could be helpful, although research shows there will be little retention of the skill unless it is immediately applied in the context of *the student's own writing and writing intentions*. Spelling checkers and style checkers can ease editing and proofreading tasks.

(For a helpful article summarizing the use of various computer/software aids for instruction during the writing process, see Helen Schwartz's "Teaching Writing with Computer Aids." (1984). And for an extensive compilation of recommended software programs indexed to a Language Arts curriculum which incorporates the process approach see the Yukon-Koyukuk School District's **Project APEL—Apples for Proficiency in the English Language—Handbook**. See References.)

The use of the computer which has the most potential for teaching writing with a process approach, however, is word processing.

## What Exactly is Word Processing?

Word processing is writing using a computer. One types onto a display screen using a keyboard much like that of a standard typewriter. The all-important difference is, the text on the screen is *not* permanent. It's just electronic images that can be easily erased, saved, moved, or expanded. The writing doesn't become hard copy until it is transmitted to paper by the printer, on command.





## How Do Writers Use Word Processing?

There is a wide range of ways that writers use the word processing capabilities of the computer:

- as an **exercise machine**: practicing drills, sentence building.
- as a **fancy typewriter**: typing in pre-written (usually hand-written) essentially completed drafts, using the computer for formatting clean text.
- as a **revising machine**: typing in half-baked drafts to be worked on.
- as a **tool for composing**: actually generating, creating text on the screen.

Many teachers, including those in this project, have found that it is very common for students to use the computer chiefly as a "fancy typewriter" when they are first learning word processing. Composing at the computer just feels too strange. Pen and paper seem more comfortable for the early stages of writing, especially for the more fluent, mature writers, and they'd rather bring a rough draft with them to the computer. Unfamiliar commands or lack of typing skills make handwriting seem comparatively faster and easier for recording thoughts. With practice, and more frequent access

to computers, this reluctance to do computer composing disappears.

On the other hand, remedial writers seem much more comfortable going directly to the composing mode on the machine. They enjoy creating clean text without worrying about legibility, and neatness. They can make changes in their writing without the penalty of re-copying. Remedial writers are often significantly more fluent when composing at a computer, even without a great deal of keyboarding skills. Carolynn Swanson observed an interesting reversal of this trend (see HOT TOPIC); she found that her reluctant writers also depended to a large degree on paper drafting.

Using the computer as a fancy typewriter generates plenty of enthusiasm among students, and was a common mode for many of the writing/word processing activities the project teachers designed. Whatever their inclination, however, all students should be encouraged (but certainly not forced) to use the computer as a place to compose whenever practical to do so. By far, computer composing makes the best use of the machine's potential as a startlingly powerful tool for writing.

## How Does Word Processing Fit Into What We Know About the Writing Process?

Word processing reinforces and enhances the dynamic, interactive, social nature of writing. Writing becomes more like talking.

As an extension of thinking and talking, writing is intrinsically dynamic and interactive. But the more cumbersome the tools for writing, the less dynamic writing becomes. It becomes less like talking. It becomes more static, and "frozen." Historical tools (writing on drying clay, carving on stone, illuminating painstakingly copied manuscripts, etc.) made writing very static because changes were so difficult and slow, if not impossible. Modern tools (pens, cheap, accessible paper, typewriters, printing presses, photocopiers, etc.) made writing more dynamic, because making changes was easier. And now, computers have made the process of getting thoughts into written words—with all the "messiness" and changes inherent to that process—faster and easier than ever before.

Revision no longer means re-copying or re-typing.

In word processing, a mere push of a button adds letters, deletes words, or moves whole sentences and paragraphs. Revision then becomes an inviting chance to take risks and experiment, rather than mechanically tedious, punishing drudgery. Freedom from the pain of re-copying generates more momentum, optimism, vitality, and confidence. Writing can evolve as it needs to, and always in clean copy!

For writers with little or no track record of success, who are typically over-concerned with error and "gettin'-it-all-right-the-first-time," the computer removes the terrible anxiety of writing. Revision is considered less of a punishment for making early mistakes, and more a process for getting thoughts into just the right words for finished writing. The computer lightens the consequences of change

enormously. (But of course until commands are familiar, screen editing will seem harder than good old-fashioned scratching out with a pencil!)

Linda Bischoff describes her students' revising at the screen:

*They were getting very particular. They were working with only 10-20 sentences, but they were owning those sentences. They took those and wanted to work with them, and manipulate them and play with them. . . . They would have revised them to death! I'd never seen such interest before in playing with words. . . . of course there was that fascination with the machine. But they were revising—enthusiastically!*

Alma Harris noted the difference in response when she'd make suggestions for changes in a piece of student writing:

*Now they say, "Oh? Okay, that's no problem. I'll just go home and fix that on my disk. If they're using a computer it's just a shrug of the shoulders—no problem!! It doesn't upset them anymore to change and improve their papers."*

### Re-reading is easier.

Research has shown that re-reading, doubling back again and again on what has been written is part of what propels writing forward. It's critical to the evaluating and planning that is revision. With clean, easy-to-see text, re-reading becomes more a part of writing. Writers can move forward recursively, integrating invention and revision into one creative process, rather than in sequenced steps. Easier re-reading means easier re-writing. It helps writers take on the role of reader.

For remedial writers, this is especially significant. It has been found that poor writers re-read less frequently and less thoroughly, missing the opportunity for reflection and new ideas that such back-scanning generates. Their fluency is seriously blocked when re-reading their own writing is embarrassingly difficult due to poor handwriting and messiness. With a computer, their writing is dignified in clean text; they begin to take themselves seriously as authors. They don't have to squander energy on neatness and handwriting, they can just



concentrate on what they want to say.

Clean text means that revision becomes literal as well as figurative. The distance a writer has from his/her own words—literally—is increased, which in turn increases objectivity—it's much easier to be an audience for your own words. Linda noticed this objectivity:

*I think they noticed their mistakes more clearly, more easily. With most people, it's not good to proofread your own materials—because you read right through them on paper. My students could hardly proofread for each other. But the screen definitely created objectivity. Those errors would jump out at them, and they didn't like them. So they went back and cleaned them up . . . I saw fewer run-ons and fragments, fewer punctuation mistakes . . . they just loved that machine.*

Harris Thomas found that clean text made a difference in spelling for students:

*A lot of kids noticed many more spelling errors in the typewritten print than in their own handwriting. I guess when you see it in print, you can do that—I'm not sure how, they just did. It stands out more somehow, I suppose.*

Interestingly, although clean text is very helpful to writers—and readers—it adds a new twist to the issue of fairness in grading for teachers. On the one hand, since it's hard not to react negatively to messy papers and illegible handwriting on final drafts, clean text enables us to judge a student's work apart from that distraction, which may have overly-influenced our response.

But some teachers are finding out that clean text can overly-influence us, too. That is, sometimes teachers are so grateful to receive such easy-to-read work, so impressed with fancy formatting, centered titles in boldface print, justified margins, etc., etc., that they don't judge the writing itself carefully enough, especially in the case of intellectually gifted students. We need to become sensitive to our own reactions to the beauty of clean text!!!

### **The computer helps internalize a sense of audience.**

By responding to the writer, the computer functions subtly as an audience, as C. Daiute suggests in a recent article. It carries out commands, tells the writer what commands it has completed and . . .

*"the cursor then blinks, waiting for more text or other commands. This invitation reminds the writer*

*that the program is waiting to receive input, which encourages the writer to say more and to consider whether what is written makes sense . . . interaction with the computer also helps writers learn to monitor their own writing processes and to evaluate the product. Since the text editor simulates a potential audience, writers are concerned to communicate clearly even when freewriting. This concern encourages them to reflect on their writing in inner dialogues about their texts."* (1983, p.141-2)

In a physical sense, as well, writing on a computer screen in a lab or in a classroom seems to invite collaboration and audience response (whether invited or not!) Writing becomes instantly public. Students will often cluster around one screen commenting on, talking about, sharing the writing that's going on. Small group writing projects become genuinely collaborative, cooperative efforts because of the ease of physically incorporating more than one person's ideas into the writing. As ideas take shape in group talk, the writing evolves painlessly without generating mess and the need for re-copying. Everyone can easily see the screen and respond. Several teachers in the project made the most of this audience awareness capacity of the computer in their writing activities, by assigning group work, writing with partners, etc.

With a word processor, "publishing" becomes almost effortless. The ability to produce a clean final text with just the push of a few buttons, makes writing for real audiences an intrinsic, natural part of the process, instead of a laborious re-copying task.

### **Word processing enhances a sense of ownership in writing. It gives students back the power that fear of failure and error has stifled.**

Students like the sense of control they have over computers. They like to tell this powerful machine to do all the drudge work of editing they don't want to do when they write. Didi Ryall, one of the project teachers that worked with remedial writers, described an incident when one of her students was dismayed to find that he had typed "i" instead of "I" throughout an entire piece he had laboriously composed at the computer. Envisioning the tedium of going back and changing every instance of the error, he felt so discouraged he just wanted to give up on the whole piece. When Didi showed him the find-and-replace feature that took care of such problems with one command, he was so astounded and excited that he was ready to write more!

When the computer can assume the most obnoxious editing tasks, can store copy neatly for another time, can help find spelling mistakes, and can make a student's writing look like a professional's, students become much more confident and optimistic about their writing. They have the energy to focus on ideas, and thinking, and organization instead of on errors, because errors are so easy to change. They feel much more in control. As C. Daiute confirms:

*Such control of their writing can enhance writers' sense of ownership in a piece, in turn encouraging them to make judgements about their writing. Teachers recognize the situation in which they point out errors in a student's writing and the students responds: "Yea, I thought that might be wrong" or "I knew you would say that." The text editor capacities make it easier for students to act on their own intuitions about their writing."* (1983, p.143, GP emphasis.)

Writers who hate to re-copy, writers who dislike messy drafts (the "re-starters"), writers who are ashamed of their own handwriting, writers who never have enough revision space, writers who lack spelling and punctuation skills—all have a chance with word processing to experience writing as something productive, not painful . . . as something that says boldly, "I am!!"



## HOT TOPIC

### Writing with Computers: Pride, Process, and Production

The students tended to write so much more on the screen

Even when they did a rough draft separately and then typed it into the computer, they tended to write more than kids who were writing by hand. There was a lot more writing going on, for the most part

I don't know whether that's because the computer is so new still, or because it's easier to make corrections, or because it's easier to read their own writing, but I do know it made a real difference now. Whether it will in five years, I don't know.

Carolynn Swanson

For my remedial kids, revision—major changes in ideas—remained difficult. But on the computer, editing—for mechanics—was fun. . . . The computer invited extension of writing. Working with the computer always produced more text, more ideas, more everything. Adding and filling in was common. The computer was a great enhancer. . . . As they'd type in their stories they'd say, "Oh, I'm going to add this, and this, and this." They were much more involved in their writing on the computer than they ever were on paper

for the first time they could see what they had written, and they began to be more responsible for their errors.

Didi Ryall  
final interview

My students loved the ability to save their work, and then haul it up on the screen anytime they wanted. They used to spend lots of time just enjoying looking at their catalogues. "Look at all this stuff I've written!" they'd say. "I wrote that and that and that!" . . . I loved watching them carry their little disks around like containers of treasures, and then get text on the screen and sift through it, re-reading what they'd written. Having their own computer disk became a new status symbol. A peachie full of papers—who cares? But a disk meant. "Look at me, look at how important my work is! I did something worth saving and I can make it appear any time I want to. I have mastered this technology." The disk is their badge.

Didi Ryall  
final interview

Today during first period, Karen and Mishy put their rough drafts on the processors. Mishy said the screen helps her to see weaknesses in her draft—she "needs

more support for the sub-topic of the emptiness of the prairie." Ah-ha! the processor is helping the writing process! . . . Tonight after school, Beth and I were discussing Hamlet and her proposed thesis of Hamlet's tragic flaws. I suggested she look over her Greek notes about tragedy, and she said, "Oh yes. As a matter of fact I'll look at my Greek paper—it's on my disk so I can re-read it any time. That's what's so wonderful about computers. I think I may have lost the printed paper." Ah yes, another use for our computers . . .

Alma Harris  
project journal

I noticed that students were spontaneously forming little writing groups around a screen, responding to a piece, helping somebody to revise or find the "right" word. The computers opened up an exchange about writing that was really nice to see.

Alma Harris  
final interview

First observations (about the computers in the classroom): . . . the students noticed how short their entries are when printed out, and realized they need to work to get longer writings.

Tom Drazdowski  
project journal

For one remedial student, it was the first time I'd seen him really write, and edit, put things down. It was really exciting to watch him—you could just see it. Physically, the air about him changed—how good he felt that he could do it. The low level kids really need all the strokes they can get. And they were receiving those strokes, not only from me, like normally, but also from the machine. They were seeing something happen. Their reactions were unbelievable, when they saw their work in print for the first time. It was like they had been published! They were ecstatic! It was so exciting—for everybody! The really bright kids reacted no differently.

That's what I think is so wonderful. We've had many tools in this profession, but I don't think I've ever seen anything quite like the computer that could touch both ends of the academic spectrum—from remedial to accelerated—so positively.

Linda Bischoff  
final interview



## FROM THE CLASSROOM

Carolynn Swanson

Carolynn Swanson has been teaching for 16 years, 14 of which have been in Alaska. With an MAT in Education, she is currently teaching English at Juneau-Douglas High School, and has also taught reading, geography, and journalism. As a result of her work with a National Humanities Foundation interdisciplinary grant, she is now involved in a seminar with the National Endowment for the Humanities. Both programs emphasize the importance of writing and thinking in all subject areas, a particular interest of hers. Carolynn has also studied in the Summer Writing Program at the Breadloaf School of English. This letter-writing unit she designed particularly encourages the use of the editing and printing capacity of the word processor, since letters have the built-in motivation of publishing for a real audience!



## WRITING SKILLS/WORD PROCESSING ACTIVITY: LETTER WRITING

**Objective:** To learn the correct forms for letter writing and to become familiar with writing on a word processor.

**Teacher:** Carolynn Swanson

**School:** Juneau-Douglas High School

**Grade:** 9

**Number of Students:** 68 (two average classes, one remedial)

**Subject:** Language Arts

**Length of Activity:** 3 weeks

**Computer Access:** Computer lab of 7 (Apple IIe)

**Word Processor:** AppleWriter IIe

**Writing Process Emphasis:**

- ☐ Fluency
- ☐ Drafting
- ☐ Responding
- ☒ Revising
- ☒ Editing
- ☒ Publishing
- ☐ Entire Process

### Word Processing Training Procedure:

Each regular class was divided into groups of six or seven students for the lab work. Each group was given a 45-minute session in the lab (with seven machines) in which I gave students an introduction to the basic word processing commands with the help of the Condensed Command Sheets for the Applewriter IIe.

In the remedial class I simply posted the Command Sheets and put booklets next to each of the two machines that I had in the classroom. This was followed by a 15-minute review of how to handle disks and how to care for the machines.

It should be noted here that there was reason for the distinct difference in the treatment of these two groups. My remedial students were far more familiar and at ease with the machines than the average groups were. My guess is that computers had been used in the remedial classes more in earlier grades. Also the project was begun earlier in the year for the average ability classes, so any typing skills they may have been learning were at a lower level than those of my slower students later in the year.

# LETTER WRITING UNIT

## Regular Class

### Lesson objectives

1. You will be able to
  - list five reasons for writing letters
  - identify the parts of social and business letters
  - distinguish between an acceptable and an unacceptable business letter
  - write an acceptable business letter
  - demonstrate the two correct ways to fold letters
2. You will produce a portfolio to be displayed at open house which will include a skills checklist and an example of each of the following:
  - a friendly letter
  - a letter of complaint
  - a bread and butter letter
  - a letter of acceptance
  - a letter of thanks
  - a letter of application
  - an order letter or a letter of request
  - an envelope addressed in indented form
  - an envelope addressed in block form
3. You will have used a word processor to complete at least one business letter.
4. You will send and receive an answer to a social letter.
5. You will send and receive an answer to a business letter.
6. You and a friend will produce a "Miss Manners" type exchange for the entertainment and enlightenment of your classmates. These will be bulletin board material

### Skills and knowledge you will need

- writing complete sentences
- using capital letters correctly
- using marks of punctuation correctly
- following directions
- determining the type of letter suitable to your audience
- contributing to a group effort
- PATIENCE (especially with Mrs. S.)

### Materials and equipment you will need

- pen
- paper (scrap, 8½ x 11 plain)
- 2 legal envelopes
- 2 small envelopes
- 2 stamps
- construction paper
- transparent tape or glue
- yarn, string, or brads

### Sources of information and help

- Messages and Meaning III-Chapter 16
- All About Letters
- Xeroxed hand-out for this unit
- Mrs. Swanson (you know her!)
- Mrs. Beiflower
- Mrs. Symonis

### Terms you need to know

indented style	block style
semiblock style	social letter
business letter	heading
inside address	inside address
salutation	body
complimentary close	signature
friendly letter	letter of thanks
bread and butter letter	order letter
letter of invitation	application letter
subscription letter	
letter of inquiry or request	
letter of acceptance or regret	

### Classmates who can help with:

Computer:

Directions:

Capitals:

Spelling:

Punctuation:

923 "D" STREET  
Juneau, Alaska 99801  
November 9, 1984

Dear Mom,

How are you enjoying your stay in California, with Grandma? If you are still wondering what to get me for Christmas I found the address for Quartermaster, the military supply store that civilians can go to. The store is located on Long Beach Blvd., between 7th. and 8th. streets a block away from the new mall, in Long Beach. Their hours are, Mondays - Fridays 9:00 A.M. to 6:30 P.M. and Saturdays from 9:00 A.M. to 6:00 P.M. They have some neat books and other merchandise there (its the place I'd like to be right now).

How is the weather there? Here it's ok, but it snowed on Sunday, then rained on Monday. The rest of the week it hasn't rained or snowed, its just been semi-cold and windy.

How is Grandma? Don't forget to get a good picture of Grandma for our scrap book. If possible, it would be nice to get a picture of you and Grandma together.

Love your son,

Jack

# LETTER WRITING UNIT

## Remedial Class:

### Lesson objectives

1. You will be able to
  - list five reasons for writing letters
  - distinguish between acceptable and unacceptable letters
2. You will have used a word processor to complete at least one business letter.
3. You will successfully complete assigned practice assignments.
4. You will send and receive an answer to a business letter.
5. You will send and receive an answer to a social letter.

### Skills and knowledge you will need

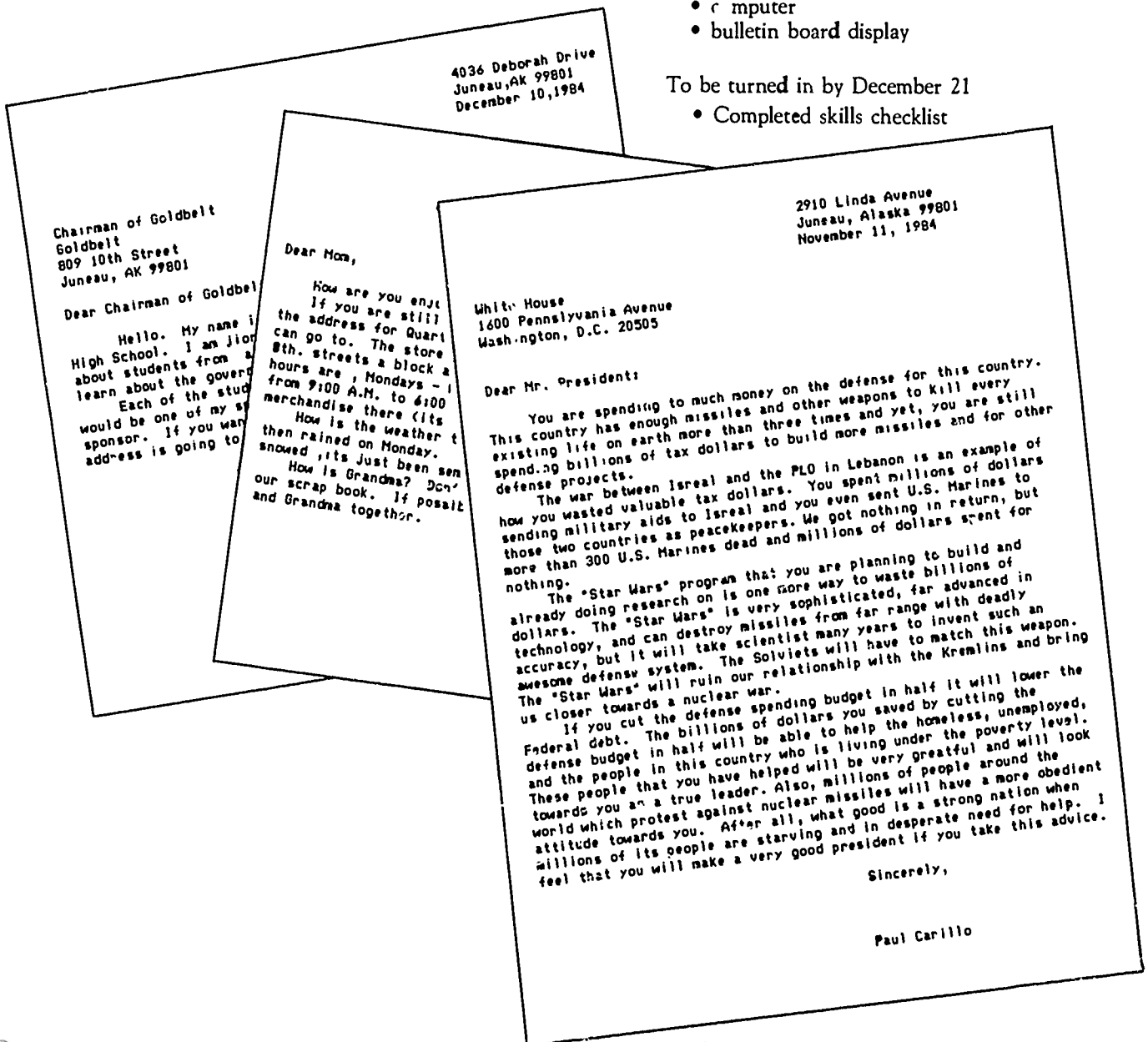
- writing complete sentences
- using capital letters correctly
- using marks of punctuation correctly
- following directions
- determining the kind of letter necessary to do the job

### Materials and equipment you will need

- Messages and Meaning. Chapt. 16, pp. 214-236
- pen
- plain paper or stationary
- 4 envelopes
- 2 stamps
- All about Letters
- handouts from Mrs. S.
- computer
- bulletin board display

To be turned in by December 21

- Completed skills checklist





# Everyone Has to Start Somewhere

ByCarolynn Swanson

When I was trying to decide on an effective word processing writing activity to use with my classes, I had several criteria other than just the use of the machine itself. Quite frankly, I wanted to do something that would work whether or not the computers were used. I also wanted a lesson that had an inherent attraction besides the computers for those students who, like me, were not sure about this new way to write. I also wanted to eliminate the stresses of having to learn too much at one time. Finally I wanted a job that would be made easier, not more complicated, by the use of the computer.

In choosing my lesson for computer use, I therefore decided on letter writing for the following reasons: it was a relatively successful unit that I had already drawn up which would require little adaptation to integrate the computers; letters had their own built-in rewards: answers; most students were familiar with the general format of both personal and business letters; letters, especially business, need to be as neat as possible.

On the whole I was satisfied with the results of this unit. The computers did provide an incentive for some students who might otherwise not have bothered to finalize their letters. Those students unhappy with their own handwriting were delighted with the appearance of the computer printed products. Often students found editing the computer copy easier than editing their handwritten copy. There was some computer uneasiness with a few students, but they were helped by their friends and encouraged by me (possibly as much by my own ineptness as by anything else!) and everyone finished at least one letter, with most everyone actually completing the required two.

Looking back on my experiences this year with the computers, I find I am much more positive about their function in the classroom than I was before the experiment. However, much of my earlier skepticism may have been based on my own feelings of inadequacy where the machine is concerned. I still have occasions when I don't know the quickest or most efficient way to do a task on the computer, but I can usually improvise, if I don't have a student available to help. That's a big "if" because we have fumbled along together, sharing

our ignorance. The students were not upset by my lack of expertise. In fact, it sometimes helped all of us for me to be "stupid" about something too.

However, wholly apart from improving interpersonal relationships within the classroom, using the computers this year has opened up other teaching possibilities for next year. I have been asked to teach journalism and to produce the school paper. This will involve extensive work with computers and a word processor. I have bought a basic journalism packet for the beginning journalism class, and we are considering the purchase of an interface card to link the computer to the offset printer, with the possibility of adding a modem the following year to exchange news with other schools. Without this year's experience, I would never have thought myself capable of this new challenge.

Maybe the best way to illustrate my point here is to say that I bought a computer for home use in 1982, but it wasn't until 1984 that I have really made any use of it. I never seemed to find the time to read the manuals and learn the correct ways to do everything. For two years it sat relatively unused, waiting for me to become competent. Well, I'm still not competent but since using word processing with my classes my computer has become an indispensable part of my life in the last few months.

My experience in the classroom taught me as much as it taught them (isn't that always the way?). But, the most important lesson I learned is that even if I don't have all the answers to the computer problems, the computer is still an effective tool in the teaching of writing, because students, with a minimum of effort, can create professional-looking products that they are enormously proud of. The word processor can make a real difference in students' attitudes toward writing.

## FROM THE CLASSROOM

### Didi Ryall

After teaching for five years in an elementary "adjustment" class (special ed.), Didi Ryall felt sufficiently "adjusted" and moved to Alaska! She taught in a special education resource room at Marie Drake Middle School for ten years. This is where she worked with the "arcade kids," she describes here, after she attended the 1984 Open Institute of the Alaska Writing Consortium. Recently she transferred to the Juneau-Douglas High School, to teach high school English.

"I miss my special ed kids," she says, "but this new job gives me a chance to go more deeply into some of the ideas I learned in the Alaska State Writing Consortium Summer Institute. I consider that experience to have made a profound difference in my teaching. It was an absolute life saver for this nearly burned-out teacher!" In this lively, successful project, Didi's renewed enthusiasm for teaching and writing is evident as she taps into her students' on-going infatuation with the computer to invite them to write.



### WRITING SKILLS/WORD PROCESSING ACTIVITY: ADVENTURE GAME GUIDES

**Objective:** To write players' guide for various computer adventure games.

**Teacher:** Didi Ryall

**School:** Marie Drake

**Grade:** 8-Special Ed.

**Number of Students:** 8

**Subject:** Language Arts

**Length of Activity:** 2-3 weeks

**Computer Access:** 4 computers in room

**Word Processor:** Homeword

**Writing Process Emphasis:** ☐ Fluency  
☐ Drafting  
☐ Responding  
☐ Revising  
☐ Editing  
☒ Publishing  
☒ Entire Process

#### Word Processing Training Procedure:

Before introducing Homeword to the students, I set up the disk for printer type, interface, etc, so it was ready for use. I demonstrated Homeword to the class as a whole, by gathering the students around me at one computer. I then gave them a guide sheet to use and let them practice on their own. When they could type in text, make corrections, save files, and retrieve them, they began to work. (Although all the students were new to word processing, it only took them ten minutes to be able to do all that independently.) I showed them, as the situation required, how to move and erase blocks of text, and find-and-replace.

#### Writing Assignment Procedure:

**Prewriting:** Students were given various examples of "hint books" currently available which assist in solving adventure games. Infocom (premier adventure game company) has a series of excellent guides that go with their software. Also, A Survival Kit for Apple Adventure Games, is useful. There was much discussion of how to write a hint, without "giving it all away," and some practice in writing hints, trying for subtlety and cleverness.

**Drafting:** Students were given a half hour to play various adventure games ("The Coveted Mirror," "Transylvania," and "Cranston Manor" were used since I had already "solved" these and could give kids advice if they ran into problems). In teams of two, the kids played—one at the keyboard while the teammate mapped and took notes. Roles were reversed the next day. After a half hour of play, the students saved their games and wrote up notes for that day, using Home-word or pencil and paper.

The students were asked to write clues that would assist a player of the adventure game but would not simply tell them the solution to a problem. E.g., in "The Coveted Mirror" a player is allowed to be out of his dungeon cell to explore the area, but only for a limited time. If he finds certain treasures during the game, he can give them to Boris, the avaricious guard, who will then give the player more time. One student wrote this clue: "Find something Boris might like, offer it to him, and you may find you have more free time."

All three of the games we used proved to be very popular—especially "The Coveted Mirror" since it has a couple of arcade scenarios.

**Responding/Revising Editing:** For each day's notetaking, each pair revised and edited their work, either at the computer or at their desks. Knowing that other students would eventually be using these hints, the teams had a genuine sense of audience. As pairs worked at computers, there was constant interaction between teams—often unsolicited suggestions and advice which kept everybody on their toes!

**Publishing:** These guide books were given to other students in the class and to members of my computer adventure games activity class. Those students evaluated the usefulness of the guides. The maps and hints seemed to be quite popular. (And certainly cheaper than the many expensive hint books currently available at computer stores!) **PUBLISHING IDEA:** In the Scholastic publication, "K-Power" which is found in **Family Computing**, money is offered for adventure game clues submitted by students.

### Didi and the "Arcade Kids"



# Pac-Man Vs. Homeword: The Arcade Kids Learn to Write

By Didi Ryall

Walking into my dusty, cluttered classroom that week before school started, I was determined that things would be different. This year I would keep my desk tidy, file all my extra ditto copies immediately, water my plants regularly (so kids would stop asking, "Aren't they supposed to be green?") and inspire these special-ed students to write. My previous years of experience with my students had convinced me that it would be easier to keep an unwatered begonia alive than it would be to get these kids to willingly express themselves on paper.

This year, however, I was determined it would be different. I came armed for "combat" with my arsenal of ideas from the Summer Institute of the Alaska State Writing Consortium, and my "big guns"—Apple IIe computers.

Teaching writing to my special ed "resource" students had always been a combination of small successes (theirs) and major frustrations (ours). Many of these kids had histories of academic failure almost from the time they entered school. By eighth grade most were convinced (though few would admit it) that they were "dumb" and unable to learn anything. The result was at best, apathy, and at worst, open hostility to any task that even faintly resembled school work. The thought that these children would enthusiastically write, revise, and edit strained at even my lofty optimism, and I wasn't entirely sure that what I was aiming for didn't border on the utterly impossible.

The first day of school found every student eager to use the computers, but not quite the way I had envisioned it. I had pictured them earnestly composing at the keyboard—they had dreams of an arcade heaven, conquering Pac-Man and Fragger. I assured them that game playing had its place, but not during class time (except when we worked on the enormously successful guidebook project), and demonstrated the word processing software I had chosen to use. Homeword was a good program for them—easy to learn, easier to use, and ideal for use by kids with limited reading skills. I found that it didn't take long before the kids were eager to use the machines for writing.

Because I had access to four machines and my largest class was twelve students, the kids were able to have a good deal of computer time. I praised,

and encouraged as they wrote longer, better compositions, revising and editing without too many complaints. For a large number of kids, the computer was an invaluable tool. Many of them had real motor problems, and the pencil/paper writing they were required to do was laborious and time consuming. The computer gave them freedom from this oppressive task.

While none of the students had any real keyboarding skills prior to their use of the computer, that did not prove to be a major problem. They hunted and pecked away at the keys and soon became quite adept at typing in a lengthy composition.

What was especially interesting to watch develop was their complete willingness to write longer and longer pieces. Several of the students, who with pencil and paper considered five sentences a major work, wrote on and on and often were stopped only by the bell at the end of the period. They came in before school, after school, and begged to be allowed to stay in at lunch to work at the computer. It was also heartening to see how they edited their work. The almost illegible handwriting of a large portion of the students had posed problems in the past. Correcting their work was next to impossible when they could hardly decipher their own handwriting. So, writing with the computer and printing their work enabled them to see their errors much more easily. This wasn't a negative experience, however, because they were working on making things better, in the context of a growing new awareness of themselves as writers.

One category of errors they began to see more clearly was misspelling. They weren't always sure how a word should be spelled, but they did know what they had written was incorrect. I had them refer to word lists that I had made for them or had them work with the more able spellers in the class. Sometimes I just gave them the correct spelling and they added the word to their personal spelling lists, kept in their notebooks. I am looking forward to having them use a spelling check program next year (there is one designed to be used with Homeword). This may encourage them to take more initiative in that area.

As we followed the tenets of the process approach, writing became a far more cooperative and collaborative act. The kids wrote, shared, talked about their writings, responded to the writings of others, and with each other's help made final copies they were proud of. I wrote, too, and shared my writing. We "published" on our Imagewriter printer. These papers were a source of tremendous pride and they were treated with respect—displayed prominently in the classroom, on the corridor walls and in the showcase outside our door. I remember the sense of accomplishment ("ownership") I had felt when I saw the story published that I had spent so many hours struggling to write, during the Writing Consortium Summer Institute. I knew that the kids were feeling something of the same pride. It was a tremendously rewarding experience for them to see a printed copy of their work, something entirely different and so much more special than a handwritten one.

The process approach to teaching writing and the computer came, as it were, hand-in-hand to our classroom, but I am sure that the lion's share of the credit for the enthusiasm the kids showed for writing must go to the emphasis we placed on the writing process itself: an emphasis on writing for real audiences on topics that came from the kids themselves, and an emphasis on publishing

that writing. I am convinced that the process focus made the real difference in their attitude, and encouraged them to investigate their own ideas, memories, and dreams and to share them, in writing, with an audience broader than the one they traditionally had had: their teacher.

The computer added a sense of dignity to their efforts. They realized that they could not only "master" the technology but could manipulate it to suit their purposes for writing. However, without the shift to valuing the students' own processes and ideas, we could have had a roomful of computers and still their attitudes about writing ultimately would not have changed. Once the novelty of the hardware had passed, we would have been back to the familiar "I don't have anything to write about," "I can't do this," "I won't do this!"

I haven't seen my desktop surface for several months (buried as it is in dittoed material waiting to be filed) and my students still wonder why I keep flowerpots of withered brown twigs on my countertops, but the most important of my pre-school-year resolutions has been kept: my students now enjoy writing. It still is not always easy for them, but the good sense of the process approach and the incredible motivation of the computer have enabled my students to become successful writers, for the first time in their lives.



## FROM THE CLASSROOM

### Shirley Carlson

Shirley Carlson, has taught for 22 years, and now chairs the English Department at Juneau-Douglas High School. She teaches junior English as well as Special Emphasis Lab, an individualized program for students who are interested in pursuing English skills beyond the regular classroom. In 1984, she attended the Alaska State Writing Consortium Open Institute in Juneau. In addition to an M.A. in English, she also has done post-graduate work in reading.

Zan Northrup was a senior student in Shirley's Special Emphasis Lab, who, with Shirley's encouragement, elected to teach himself word processing, and use it in the writing of several papers assigned in other classes.



In the fall, when the time came for me to decide on a computer/writing skill project, I felt rather frustrated. The training workshops in the spring had not gone in to enough depth for me to feel comfortable. Plus this particular year, I felt I already had enough new additions to my departmental and teaching responsibilities—a new administration, new policies, new schedule, several new teachers, having freshmen in the school for the first time, etc.—without adding word processing to the list! So I tried to think of something I felt I could handle, given my priorities, and my amateur knowledge of the word processor.

My junior classes didn't seem like they would work for this project—they were too large, and included many students with reading, emotional and behavioral problems. (Responsibility for public property is not one of their strong points!)

My SEL (Special Emphasis Laboratory-English) was the class I felt the most comfortable with. The student enrolls in this elective by choice because s/he wants to further her individual English skills. They are highly motivated and work fairly well independently.

When I had my SEL students plan their curriculum, Zan Northrup was the only student who chose to do creative writing, so I focused on him for the writing project. I encouraged the others to use the word processor, and four students, including Zan, chose to learn at the same time. They basically taught themselves, and within a few sessions, each student had acquired the skills to make practical use of their word processing software.

Zan, however, shifted from "creative" writing to more practical writing as he began to focus on applying for a foreign exchange program during the first quarter, writing personal essays and resumes for that application, preparing for SAT, ACT exams, and writing and editing papers for his advanced English class.

I felt comfortable with his mastery of the word processor. We would discuss his papers and he was able to edit them quickly and neatly on the processor. The computer was not always accessible to him and he did not have one at home, so his use of the processor was limited.

Through Zan, I found that a student who is highly motivated and interested can quickly master the use of the word processor. And, when he also has mastery of the skills needed for editing, and revision, he will edit and revise more often and more thoroughly on the word processor than he would if he had to manually rewrite each change.

How to teach every student in every class in word processing in every class is still a mystery to me and I do not feel at this point ready to tackle that project, especially having just one computer in the classroom. It seems to me that it would probably be best to have a classroom of computers rather than one computer in a class.

One benefit of this project is that as students at all grade levels continue to learn word processing, we can hopefully shift from focusing on computer use per se to using computers to emphasize the creative process and forms of writing.



## STUDENT INTERVIEW

### Zan Northrup

**GAIL PARSON:** How did you normally go about writing a paper before using word processing?

**ZAN NORTHROP:** I'd make an idea list or outline, then write a rough draft by hand, leaving spaces so I could go back and make out all the revisions there, and then type the final. Sometimes I'd notice things I hadn't fixed yet, and change the final as I wrote it. How word processing has helped me most is in doing more revising. Before, when I'd see things on my typed draft that needed changing, I often wasn't willing to go back and retype the whole thing just to fix them.

**GP:** How did you do your paper with word processing?

**ZN:** I still prefer to do prewriting activities by hand, because it feels better. I just wrote down any major sections and ideas I didn't want to forget. Then I wrote the rough draft on the computer. That was a little awkward, probably because I haven't done it very much. If I had one at home, I know I'd compose more. If for no other reason, your hands don't get so tired! Right now, though, I still would rather do the rough draft on paper, getting a really good idea of what I'm going to write before I type it in.

**GP:** Does your typing get in the way of composing at the screen?

**ZN:** No, in fact, my typing is faster than my handwriting, but I just relate better somehow to the paper for a rough draft. It seems easier to cross things out than push buttons to change things.

**GP:** Pushing the buttons was harder?

**ZN:** Well, Bank Street Writer is kind of a pain to use (Zan was using the early version, in which different editing tasks require changing modes) but still I know I did more revision using it than doing my paper the old way. I got a pretty good grade on this paper, and I know it's because of the word processor. I felt freer to make revisions. I did more drafts.

**GP:** Tell me about those drafts. Did you revise on the screen, or the print-out?

**ZN:** What I did was, I did the rough draft at the screen, then printed it out and revised by writing right on it. Then I'd fix the screen, and print it again, and revise again. I'd change little things like spelling right on the screen, but I'm still more comfortable with dealing with idea things on paper. So then I showed it to my English teacher, and

he made a couple of suggestions which I probably wouldn't have taken if I hadn't had the whole thing on disk. I removed an entire paragraph, and composed a new one right at the screen—because I knew exactly what I wanted to say. I need to know the basic ideas before I type.

**GP:** Is it easier to see your mistakes in clean text?

**ZN:** Yes, definitely. That was one of the best parts of using it. Before, when I'd revise without a word processor, my paper would get cluttered with different colors of ink and cross-outs so that by the time I was ready to type I could hardly read it sometimes. But somehow with a word processor, you can really see not just mechanical mistakes but faulty ideas, things you didn't develop well enough. It seems to remove you from the writing sort of—makes you more objective. The printout is kind of like a book or something—not quite mine.

**GP:** You're talking about revising on the print-out then, not at the screen?

**ZN:** Yes—I get that objectivity not on the screen, but once it's printed out. I'm still not totally into the Information Age. I still need something to hold onto!

**GP:** Is the computer mostly a fancy typewriter in your writing process, or is it more than that?

**ZN:** It's more than a fancy typewriter for me, because I did do some composing. And on a typewriter I sure wouldn't have composed so much.

**GP:** Should word processing training be a standard part of an English class? Did it make enough difference for you? Do you think it's that valuable?

**ZN:** I think it's important enough to spend time on in class, I wouldn't want to see a lot of time spent on it, though—maybe a day or two. Many people already have computers at home, and have been doing word processing for a while. So probably it should be an optional strand. But kids should be exposed to it. Of course, then they'll get really hooked on it! I've noticed that I type much faster at the computer than I do typing onto paper. I guess I'm not as afraid to make mistakes. The whole process of writing is just so much easier and quicker.

**GP:** Would you want a word processor for college?

**ZN:** Definitely. I'm even considering that in deciding what school I go to. Some colleges will provide a computer to their students.

## HOT TOPIC

### The Word Processor: A "Fancy Typewriter" or a New Tool for Composing?

Most kids drafted on paper and then edited and corrected on the computer. Students who are less confident as writers especially seemed to want to do that—even if they completely ignored what they had on the paper once they got to the machine. Those students who were not sure of their typing skills wanted to have it written out first by hand, and then as they typed it on the computer they picked up mistakes . . . They needed something on paper to get them to the machine.

But that to me is normal because that's what I did for a long time. It's a stage. I was very reluctant to let go of my pencil and paper . . . when I started, people kept telling me that I should compose at the screen and not use a rough draft. My reaction was, "No—the pencil is important to me," and it was. It was important to me until I realized that I didn't need it. But if somebody kept telling me that I couldn't, the pencil was going to stay. At the time I could write faster than I could type, but I'm getting beyond that . . . so, I let the students find their own way.

Maybe something in my teaching reflected my own early dependence on that piece of paper, my discomfort if I didn't have that—and even if I never said it directly, maybe something in my teaching gave the message to students that drafting on paper first was the way to do it. . .

Poor typing skills are going to affect whether or not they're going to compose at the screen, too. If they were slow at the keyboard, there wasn't going to be time for them to draft and revise and finalize their writing at the screen. If I had 30 machines and therefore students had more time, I might be more active in encouraging computer composing. . .

The composing part of it gets easier the more you use the computer, and as these youngsters get more into it, composing at the screen will develop.

Carolynn Swanson  
final interview

My students usually went straight for the screen. They couldn't wait to compose. . . The students who were ashamed of their handwriting didn't want to use paper at all, and on the computer they wrote so much more. But I saw students doing both—drafting on paper and the screen.

Nancy Thomas  
final interview

Our students were supposed to have a rough draft ready before they had their computer time, so that on the computer they were actually logging in, revising, editing and proofreading each other's work . . . but I'd say twenty five percent of the kids were actually composing right there . . . we didn't have a problem with that. But they may have had a problem with it if they weren't fast enough at composing and typing at the same time, if they had to stop and think a long time. Too long—and their twenty minutes were up and they didn't have their entries.

Harris Thomas  
final interview

## STUDENT INTERVIEW

### Karen Love and Mishy Madsen

*Karen Love and Mishy Madsen are two seniors in Advanced Placement English who used word processing for the first time during their completion of Alma Harris' essay assignment on Giants in the Earth. They both have basic keyboarding skills. Note that, typical of novice users, they are not yet comfortable using word processing as a composing tool, and instead focus on its use as a "fancy typewriter." This seems to be a function of access to and practice with the machine as much as anything else, since they do describe screen composing positively. Though they are not yet fluent enough with word processing to fully appreciate its labor and time saving characteristics, their enthusiasm is evident and their recommendations are quite specific.—GP*

**GAIL PARSON:** What process did you actually use while you were writing your essay? Did you do a rough draft on paper, or did you compose at the screen?

**KAREN LOVE:** I just wrote the rough draft and typed it up, without worrying about all the little things. Then I'd print it out with double spacing and revise. I think it's easier to sit down and write with your pencil. At least it's easier for me . . . I'm not very good composing at a typewriter. I guess, though, I never really practiced very much. I probably could do it if I wanted to.

**MISHY MADSEN:** It's easier to get your thoughts down on paper before you go to the word processor.

**KL:** It's just the way I've always done it. You always sit down and write your rough draft, you just do! That's just what I did, I guess.

**GP:** Did you find yourself doing revising at the screen as you typed in your rough draft?

**MM:** Oh, yes, you change it all around as you type it in.

**KL:** When you write something your mind is on one track, and when you go back and read it later, you think of different ways that would sound better. If it doesn't sound quite right you go back and re-do it.

**MM:** I look at it and think something like "oh, that's a little stilted and choppy."

**GP:** Do you think the revising you did at the screen is what you would have done anyway if you'd been looking at your own handwriting? Or do you think it helps to see it in type? Do you think you revised any differently because you were on a word processor?

**KL:** To a certain extent, but not a whole lot. When I go back over my writing I revise on the spur of the moment anyway.

**MM:** Whether you're doing it by hand or on the word processor.

**KL:** But when you type it, you certainly see it differently. And especially when you print it out, that really helps a whole lot. I don't know if it helps you see new things that could be different, or if it just brings things out more clearly. When you write it by hand, you might find those places, but they might not be as clear as when it's typed.

**MM:** On my rough drafts, I've got all these scratchings-out, and all these little things written in all over the place, so it's hard to see. On the print-out the sentences are neat and clear, and you really see it differently.

**KL:** It's so much neater, it seems organized. It makes it nice, almost enjoyable to work on your paper when you don't have all these tiny little writings in between the lines to try and read through.

**GP:** Do you think you did more revision on the screen than you would have done by hand, since it was easier to read?

**MM:** It is different on the word processor. By hand, if you've got the whole rough draft written out, and you start to re-copy it by hand in pen, and you write something you don't like, you really don't want to start all over if you've got almost a whole page written. And so sometimes, you'll just leave it, and not change it. On the word processor, though, you know you can just go back and change it easily, because it's already stored on the disk, and you can always print it out again.

**GP:** How many drafts did you do of the *Giants in the Earth* assignment?

**KL:** One handwritten, two or three printed.

**MM:** One handwritten rough draft would be the first one, then I would go to the word processor. Then the next would be the revision. I just read through the print out and go back to where it's stored on the disk and fix it. Easy!

**GP:** Would you want to use a word processor again? Did it make enough of a difference?

**MM:** Oh, I think it does. It's so much easier to only punch it in once, and then only rewrite mistakes, instead of the whole thing.

**GP:** Did either one of you have much experience composing at the screen? What was it like?

**KL:** It was basically like writing it. I just typed in what comes to me, but I don't go back and look at it a lot because on the word processor, I knew I could go back and easily fix it up later. Whereas, when I'm writing it by hand I pay more attention to how a paragraph is supposed to be and stuff.

GP: How do you feel about making word processing part of the English class? Is it important enough?

MM: I think it would only take maybe a week just to show us how to use it. And then, if we do have problems we do have that quick guide to flip through, and there are always people around who know more to help.

KL: I think if you don't make it part of the English class, over half the kids will never learn how to use it. With 50 minute class periods and a good teacher it should only take a week to get the basics. And there would always be those people who would get into the more complicated stuff and be able to help the rest.

MM: I mean, it would only be a week out of the year, and for the rest of the year the kids could be using a word processor for all their papers!!! Which takes so much less time than all that copying and re-copying.

KL: If you know how to type!

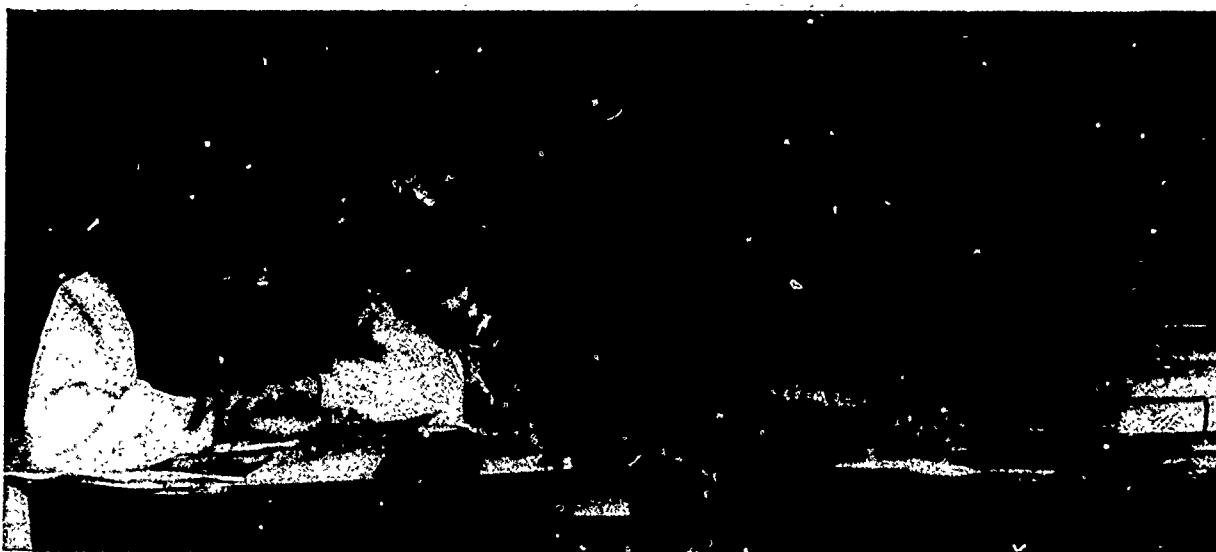
MM: It's sort of like once you learn a skill, you never forget it. Once you learn a word processor, you'd always have it.

GP: Any final thoughts?

KL: Since the training, I've written two papers on the word processor. Since then I haven't had any time to use it at all. It's a very beneficial thing, but I haven't had the time to use it enough. I think mostly it's handier, easier, because you can make changes so easily. I don't know that it's necessarily less time consuming than the old way with paper and typewriter, unless you can use it a lot.

MM: But I really like using it. If there's something I don't like I don't have to re-type the entire paper. Just insert it, or take it out! It just takes a couple minutes to get a print-out. In fact, I'm taking my paper now that we're working on this week and typing it on the word processor at home. Because it just makes it so much easier on me.

Karen Love and Mishy Madsen





# CHAPTER THREE:

## Hardware And Software

*The real word processor is the brain. The computer word processor merely allows the physical transfer of thoughts from mind to paper more closely approach the speed of the human brain.*

**Paul Berg**

Alaska Department of Education

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# What Do I Need To Get Started?

By Paul Berg

Educational Computing Specialist  
Alaska Department of Education

## Overview

There are two general types of word processors, **dedicated** and **software-based**. The dedicated word processor has word processing software "hard wired" in its circuitry. Dedicated word processors are usually expensive machines designed specifically for the office environment. Such machines as the Wang and IBM Displaywriter predominate in the big business environment because of the power of their word processing programs and the ability of the hardware to link stations together into a large office system.

A software-based word processor is a word processing program which runs on a computer. The software-based word processor generally has fewer options and less capacity than the hard wired systems, but it is far less expensive. The microcomputer and inexpensive word processing software have brought word processing within reach of the small office and classroom.

There are two major distinctions which can be applied to word processors. Some are designed primarily for text entry. This means the process of typing in text from a rough document or recorded dictation. A text entry word processor has many advanced features to allow a professional clerical person to format and manipulate the text in a variety of ways. Text entry word processors are usually complicated and may take several days or longer to learn. Most dedicated word processors are designed for text entry.

Other word processors are designed for **composing** at the computer. By composing we mean the process of writing at the keyboard. The writer has different needs than the clerical person. Usually there is little need for large memory storage capacity and the capability of linking word processing stations together.

## Tips on Hardware For Word Processing

Most microcomputers on the market today will serve as a word processor. Some work better than others. Here are a few suggestions:

1. **Microcomputer:** Make sure that the computer

has sufficient memory for serious use. Sixty-four K of random access memory is considered the minimum for serious work today. Make sure that the computer can handle a full 80-column display. Several microcomputers on the market today are limited to 40 columns on the screen. The least expensive machine may not be the best buy when you compare specifications.

2. **Keyboard:** Look for a typewriter-like layout which feels comfortable to the touch. The keyboard should tilt slightly forward toward you. A moveable keyboard is an advantage, but not a necessity. Sit down and test the keyboard. Is it comfortable? Do the keys feel firm and correctly spaced? Is the keyboard organized conveniently? One word of caution: do not give serious consideration to a membrane keyboard for word processing.

3. **Monitor:** A monochrome monitor is preferred for word processing. Monochrome monitors are both reliable and inexpensive. A green screen is the most popular monochrome color in the United States. Beware of using a television for word processing. A television will give barely adequate resolution on a 40 column display and an 80 column display will be unreadable.

A color screen offers no advantage for word processing. Most color screens do not have sufficient resolution to present an 80 column display. The exception is an RGB color monitor. These color monitors have the resolution of a monochrome monitor but cost four to five times as much.

A new type of monitor, the composite color/monochrome monitor, is a reasonable compromise for a computer that is used for both word processing and computer assisted instruction. This monitor functions as a monochrome monitor for text-oriented programs and switches to a color monitor when the software is programmed for color.

4. **Printer:** Dot matrix printers are the classroom standard. They are relatively inexpensive and have the added advantage of being able to print graphics.



**5. Storage Device:** Don't settle for anything less than a disk drive for a storage device. Tape systems, while cheap, are unreliable and can be a great source of frustration in the classroom. Two disk drives are an advantage. Some word processing programs require two disk drives.

### Features of Word Processing Software

There are dozens of word processing programs available for microcomputers today. They range from inexpensive, simple text editing programs to expensive, full-function word processors with advanced features that come close to the capabilities of the dedicated word processors.

There is no single "best" word processing program. The choice of word processing software depends on a number of variables including the price, the skill level of the potential users and the need for advanced formatting features. A simple, inexpensive word processor which is easy to learn can be more effective for novice users than an expensive word processor with many advanced features. Other educational settings may require a word processor with many advanced features.

Several basic features are common to most, if not all, word processors:

**1. Text Wraparound:** When you come to the end of a line on a typewriter, you must return the carriage either manually or by pressing a key to start a new line. A word processor does this for you with the wraparound feature.

**2. Text Editing:** Since the writer is working with an electronic image on a screen rather than ink on paper, letters, words, sentences and paragraphs can be added, deleted and moved with a word processor. Some word processing programs are better at this than others. Live editing is preferred for composing. This means that the writer can edit and manipulate text without having to change the screen to an editing mode.

**3. Printing Text:** Word processors have the ability to print a document. Check to make sure that the word processing software is compatible with the brand of printer and controller card installed in your computer.

**4. Store Documents on Disk:** Word processors can store information as a file on a disk. The document does not have to be stored on paper. The files are either binary files, which can be read only by the word processor which created the document, or text files. More advanced word processors can create text files which are compatible with a variety of word processing programs.

Many word processing programs include advanced features for performing specialized tasks. "HELP" screens give directions or list commands. These can be used instead of looking up commands in the manual. Another valuable advanced feature is the ability to justify margins. Right justification means that the right margin comes out even, as in a newspaper column. This feature is particularly helpful if the teacher plans to have students writing for a school newspaper. Other advanced features include the ability to form boldface letters, underline and merge an address with a form letter.

A number of simple word processors are limited to a screen presentation of 40 columns' width. This is one half of the normal 80 columns of print that appear across standard 8½ by 11 inch paper. The disadvantage is that what you see on the screen is not what prints out on paper. An 80 column display is definitely preferred for any but the most elementary word processing.

Menu-driven word processing programs are popular with writers. The user selects options such as edit, format and print from a menu on the screen. Menu-driven word processors have the advantage of generally being easier to learn. The disadvantage of menu-driven word processors is that the menu can slow down the experienced user.

Other word processors are command-driven. The writer must learn a number of control commands in order to make full use of the word processor's capabilities. Many command-driven word

processors have help screens which assist the user in choosing the correct command. Command-driven word processors tend to have more advanced features which give the user greater control over the printed output. These also require more time to master and may be difficult for students who have never used word processing.

Some word processors give the user menus which control the basic features, but have commands which must be learned to control the advanced features. These offer the advantage of simplicity for composing simple documents, with advanced features available to accomplish more elaborate and demanding tasks.

As a general rule, the more complex and powerful the word processor, the more time the teacher and students must spend mastering the software. The teacher who plans to introduce students to word processing will do well to consider the variables and select a word processing package with care.

### Word Processing Software Packages

There are dozens of word processing software packages on the market. More are coming out each month. Each has certain advantages that may best meet the needs of a particular school, home or office setting. The following examples have been selected as a representative sampling of word processing programs in schools. The list includes the software used by the teachers and students who have written about their experiences in this manual.

### BANK STREET WRITER

Bank Street Writer has one of the first menu-driven word processors designed for the classroom. It is marketed for a variety of computers, including the Apple series, Commodore 64, Atari 400 and 800, and IBMpc. There are two versions available for the Apple IIe and IIc.

The original version features a 40 column screen display. The program is easy to learn to use for the first-time user of word processing. A copyable tutorial program is included on the reverse side of the word processing disk. The original version of Bank Street Writer does not have live editing. In order to edit a document, the student must transfer to an edit mode. The program is limited for some classroom publishing activities by the inability to justify text.

Several significant improvements have been included in the New Bank Street Writer for the Apple IIe and IIc. The new version features live editing, underlining and boldface capability. Despite

several primitive features in the original version, Bank Street Writer is inexpensive, easy to learn and has been very popular with schools.

### CUT AND PASTE

This is an inexpensive, menu-driven word processing program which is easy for students to learn. The screen presentation is a full 80 columns, allowing the students to see exactly what will be printed on paper. There are no help screens, no live editing and no ability to justify text.

Cut and Paste is a "bare bones" word processor. Its extreme low price and simple command structure make it a likely contender for school use.

### HOMEWORD

This inexpensive, menu-driven word processor uses icons to guide the user through the menus. The icons are pictures which represent the options available to the user. These icons and the activities they represent include a file cabinet for filing, a page of print for editing, a printer for printing and a floppy disk for disk utilities. Homeword uses a total of 53 different icons in various menus. The icons make word processing easier for the new user; the experienced user, however, may be slowed down by the menus and icons.

The writing and editing modes are combined in Homeword. The user can edit without changing screen modes, a definite advantage for a writer. Documents can also be stored as text files. These are files which can be transferred between different word processing programs.

One limitation of Homeword is that the screen displays 40 columns of text. The print menu, however, does allow the user to see an 80 column display prior to printing. Homeword comes with an audio cassette lesson which introduces the new user to the program.

### QUILL

Quill consists of a word processor, The Writer's Assistant, and three support programs: The Planner, The Library, and The Mailbag. The Planner is a tool for planning during the prewriting stage. It helps in generating ideas and organizing thoughts. The Library allows students and teachers to share information by storing their writing for other computer students to read. The Mailbag allows direct communication between students by functioning as a classroom bulletin board.

The Writer's Assistant is menu-driven with live editing available to the user. Two disk drives are required to make full use of the word processor

and the supportive programs. The Writer's Assistant has several advanced features such as the ability to move blocks of text, but the procedure is cumbersome.

Quill was developed under a grant from the U.S. Department of Education. The software and accompanying documentation has enjoyed unquestionable success as an educational tool for improving student writing, particularly at the upper elementary level.

### APPLEWORKS

Appleworks is an example of an integrated software package which combines word processing, spreadsheet and data base management software into one package. Information from the spreadsheet and data base can be "pasted" into a document created with the word processor. Integrated packages allow the user to use the full range of the three most powerful software utilities within one software package.

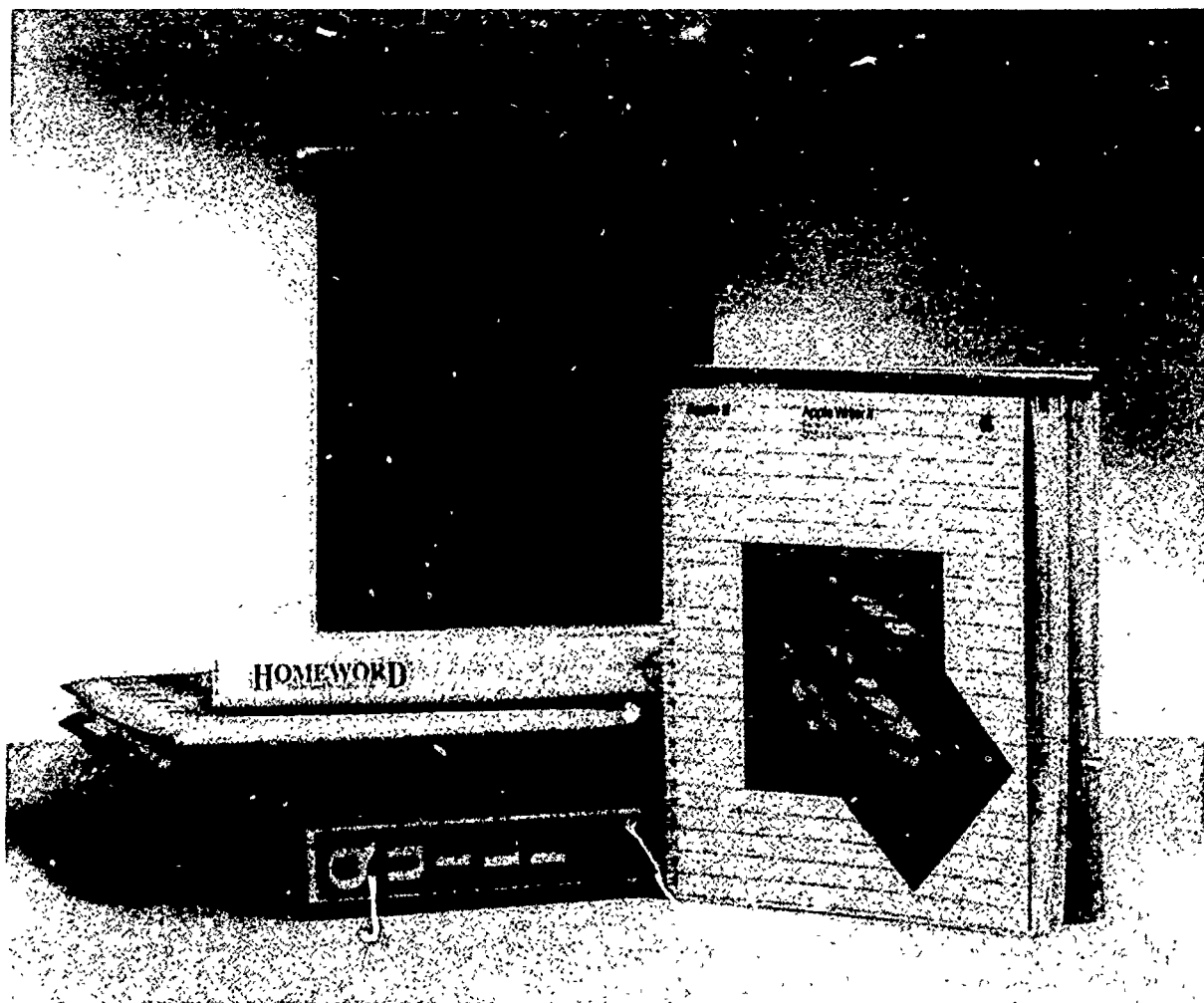
The Appleworks word processor is a toned down

version of Apple Writer IIc. The program is menu-driven, but includes command-driven features and help screens. The writer can compose and edit without changing screen modes. Appleworks, like its more powerful cousin, can generate text files and justify text. Several of the powerful advanced features of Apple Writer, however, such as the ability to use tab files and glossaries, are absent.

Appleworks is relatively expensive for a school word processing program, but is one of the least expensive integrated software programs available. The word processor is easy to learn, yet includes many advanced features. The integrated capability of this software has made Appleworks popular in the home and in high school.

### ZARDAX

This popular menu-driven word processor from Australia is widely used by Apple Computer owners at home, in schools and offices. A full 80 column display, the ability to enter and edit text in the same screen mode, and the ability to accept





input from text files identifies Zardax as a utilitarian word processor for serious users. Zardax includes many features normally found in advanced, command-driven word processors. These include page formatting options, text justification, special characters, glossary and merging capabilities.

The menus are both an advantage and a disadvantage for Zardax users. They are an aid to the writer who is new to word processing. The menus can slow down the experienced user, however, and interfere with smooth operation.

Zardax is more expensive than many less advanced word processors. It is used successfully by teachers who need a word processor which is easy to learn yet has advanced features for a variety of educational tasks.

### APPLE WRITER IIe

Apple Writer IIe is a command structure-driven, advanced function word processor priced modestly enough to be purchased by schools. The lack of menus to guide the new user can present a formidable obstacle to the writer who is a novice at word processing. Some teachers introduce students to word processing on a less complicated word processor and let them progress to Apple Writer on their own.

The advantage of Apple Writer is that it includes advanced word processing features that give the writer a great deal of word processing power. As a command structure-driven word processor, Apple Writer is fast and efficient. There is no traveling through layers of menus to get to a particular activity.

The advanced features of Apple Writer include the ability to save a document format in a separate tab file. This allows the writer to call up a particular page format that has been saved as a tab file. Glossaries are another advanced feature of Apple Writer which give the writer of multiple documents a powerful, time saving tool. Glossaries allow the user to assign a sequence of digits (letters, numbers or both) to a specified key. If the same short paragraph (up to 128 characters) is to be included in a number of letters, for example, the paragraph can be saved in a glossary file and added to each letter as it is being composed.

Apple Writer also has the capacity to imbed control commands. This feature gives the writer additional control over the printed document. For example, an internal print command imbedded in the document can tell the printer to change the font (type) style in a portion of the document as it is printing.

The mailmerge feature allows Apple Writer to address a single form letter to different addresses. Apple Writer reads the text file of addresses and merges them into the letters as they are being printed. The advanced user can soon learn to use text files from spreadsheets and data bases such as VisiCalc and Quick File.

Apple Writer IIe is a powerful tool in the hands of an experienced user who has a need for advanced word processing features. The novice student, however, may experience some frustration with this word processing software.

### THINKTANK

ThinkTank is an idea processor, a first cousin of a word processor. An idea processor is designed to help a writer create a structured outline consisting of headings and progressive layers of sub-headings.

An outline developed on ThinkTank can be re-organized by moving individual headings or whole sections of the outline to different locations. Short narrative paragraphs of up to 2048 characters can be written under a heading at any level of the outline. Paragraphs can be collapsed to allow the writer to see only the skeleton outline on the screen. The completed outline can be printed out and used as the basis for a story or article to be composed on a word processor. ThinkTank can also store the outline as a text file which can be transferred directly to a word processor for further development.

The editing capabilities and text capacity (2048 characters under each heading) are very limited, so ThinkTank cannot be classified as a word processor. It is superior to word processors, however, for organizing ideas and developing working outlines. It is also an excellent tool for training students to organize their ideas and outline during the pre-writing stage.

In the future, look for word processors to include an idea processing mode. For the present, idea processors are available separately.

(For addresses of software companies see page 125.)

## FROM THE LAB

### John Wyatt

John Wyatt has been teaching for 20 years, 18 of which have been in Alaska. He is currently teaching a full schedule of junior English at Juneau-Douglas High School, and has done extensive post-graduate study in speech and speech pathology. John organized the Word Processing Lab in the high school for the Writing Skills/Computer Project. He directed daily word processing training sessions for interested students during the high school activity period. His first-hand experience with several different word processing software packages in the lab may be useful for teachers deciding on a package.





# Reviews of Word Processing Software

By John Wyatt

Several word processing programs were sampled during the first weeks of the Word Processing Lab, including **Bank Street Writer**, **Homeword**, **Zardax**, and **Apple Writer IIe**. The latter program was the strong favorite of most students who investigated more than one processing program, and it became the overwhelming favorite of the lab instructor.

Briefly, **AppleWriter IIe** is easy to learn (or to teach), and it can be used for virtually any writing task. With a suitable printer, typically an Imagewriter, almost any format can be achieved; in addition to parallel columns, combinations of text and graphics can be prepared, including text with graphs, charts, and individually programmed displays.

While **Bank Street Writer** is a good program for students who have never been introduced to any word processing software, it does not seem suitable for the type of writing assignments most students are asked to prepare in typical high school English classes. Students saw it as being too simplistic. Some came, discovered in a few days most of what it could do, then did not return because they felt they had mastered it. Significantly, few of these students were seen to use the program later. A more common result, however, was that, rather quickly, students reached a level of expectation which **Bank Street Writer** could not satisfy. In other words, the program didn't do everything they wanted it to do. It was too frustrating for them to go through all the icons and symbols—going from one screen to another, to finally set it up to do what they saw other programs, like **Apple Writer IIe**, doing right on the screen with the push of a key or two. The limited number of choices in working with text, particularly in formatting a page, soon left students wanting a more efficient and controllable word processor. After they had seen other students working with more advanced programs, it was not long before students either asked for the new, better version of **Bank Street** or simply moved to the superior program on their own.

For the most part, high school students have the same attitude toward **Homeword**. Based on a series of sub-pages offering "icons" which guide a writer to a screen where a special function can be selected, **Homeword** seems to take a long time to

achieve what the writer desires. Every individual page or paper must be set, and the process of doing so becomes tedious to most writers.

These two programs may be best used by the beginner to become familiar with the computer itself. They may be good for junior high or fifth/sixth grade levels—for kids that have more time and less product to produce. A word of warning should be inserted here. Setting up for **Bank Street Writer** and **Homeword** was often frustrating for students because they had to go through the business of identifying the kind of computer, printer, and interface card that was being used. Since the students didn't know (or care) what was in the machines, there was a lot of irritation in the lab over setting up.

**Zardax**, although touted as an advanced word processing program, suffers from many of the same flaws as the two programs just mentioned. Without doubt, the most frustrating characteristic of **Zardax** is the necessity of using the Main Menu or Option screens whenever any special function is desired; every time this happens, the work text is entirely removed from the monitor screen and, to a degree, the writer is temporarily blind to the text which no longer is displayed. With **Zardax**, the user must chase around from one screen to another using various menus. Students don't like that. They want to see it happen right on the screen. Also, in many places the **Zardax** manual is difficult to read, and often assumes the user will have read and remembered complicated instructions which occurred many pages earlier. Setting up the disk to function with particular combinations of printers and printer cards was an annoying task here, too; it is quite easy to lose the contents of a disk, it was learned, even if every precaution to avoid trouble has been taken.

## FROM THE CLASSROOM

### Software reviews from other project teachers



All the high school teachers used AppleWriter IIe in their projects, and seemed quite satisfied with it. It was powerful, yet easy to teach. Middle school teachers (Nancy Thomas, Didi Ryall, Tom Drazdowski, Harris Thomas, and Luann McVey) used other packages:

*Homeword* is a great way to start out. Students can go on to more sophisticated programs, but it's a terrific introduction to word processing for low-level kids because of the icons. Those kids don't need all the choices, control keys, 150 variables, etc. All they need is to be able to type it in and print it out. There's no point in buying a Mercedes when a Honda will do.

Didi Ryall

I felt most comfortable with *Bank Street Writer* when we started because I had had the most experience with that package. It was easy to teach, especially with the suggestions and handouts I used from the *Bank Street Writer Activity Book* (Scholastic, Inc. publication.) We used the first version of *Bank Street* so it was necessary to change modes to do different tasks. If I had it to do all over again, I would use *Applewriter IIe*. Editing was too awkward on *Bank Street Writer*.

Nancy Thomas

*Zardax* was great! We definitely plan to use it next year. It was easy to use, and teach, because of the mnemonic nature of the command system (P=PRINT, C=CREATE, etc.) It was easy to edit on the screen. An average student, fourth grade and up, could learn to use *Zardax*, yet it can also grow with students as they want to know more difficult tasks and commands. *Homeword* seemed too cumbersome to us because it has no live editing, so the writer has to use menus and icons much too often.

Harris Thomas/Tom Drazdowski

*Zardax* is really easy to use. I spent about three hours learning it for myself, and since then it's become like touch typing. There are no problems with using it in the middle school classroom. It was easy to get the class into using it comfortably. It's versatile, and very powerful, yet easy to teach and learn. Some of my students had used *Bank Street Writer* in elementary school, and they had no trouble making the transition to *Zardax*.

Luann McVey

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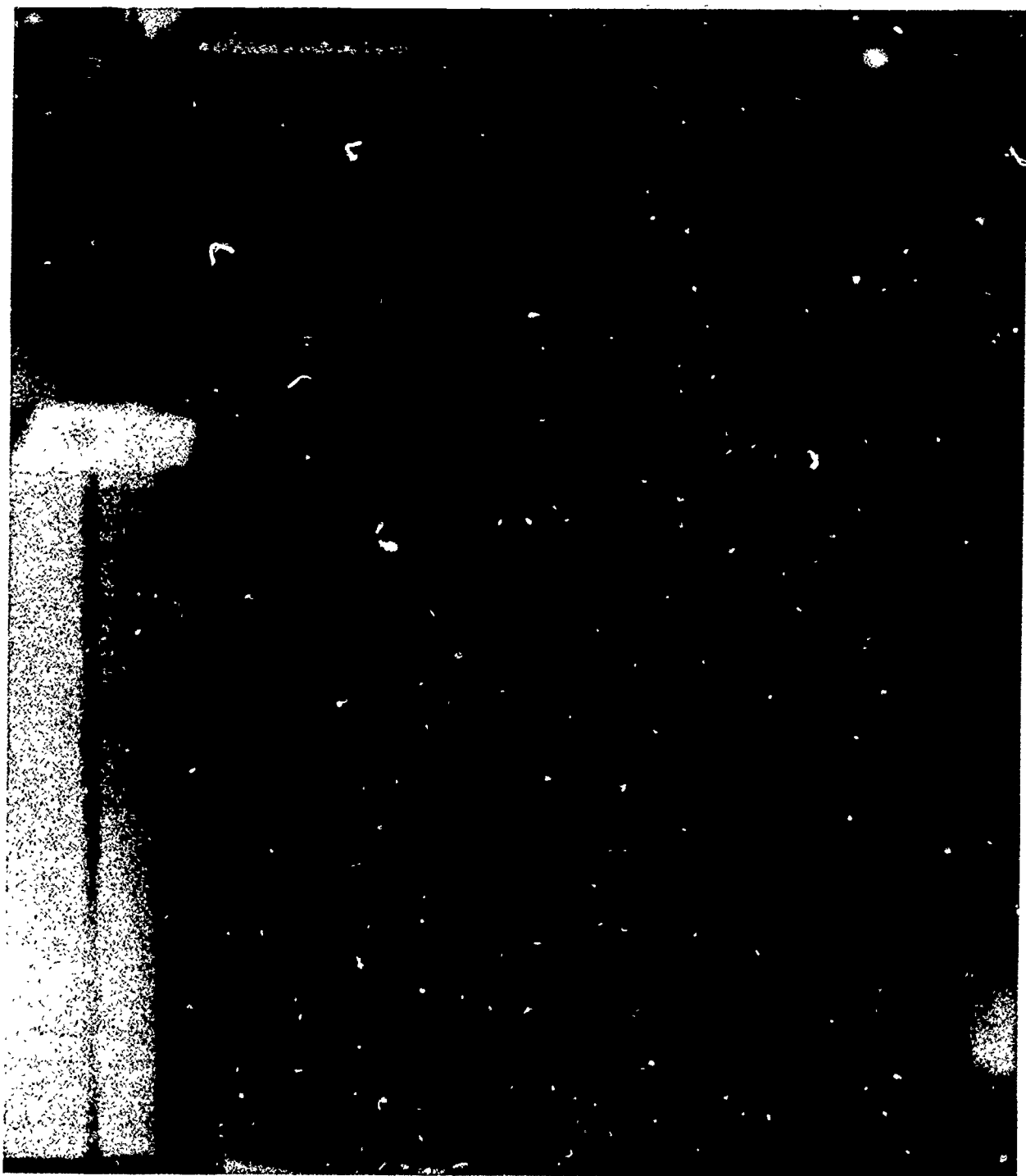
*My Apple IIe is finally fixed, and the kids know it's fixed. Several of the kids have approached me about using it. So far my reply has been, "After I let the class run through a thirty minute training about the computer, I'll let you use it." That's true, but partly I'm stalling, because I haven't taken the time to put an overview lesson together yet. I'm a little nervous. I want to be able to answer any question that might come up and I can't foresee what those are going to be. I also don't know what the next step is after the kids could be "trusted" to use it correctly. . . .*

Nancy Thomas  
project journal

*I'm ready to bag my grandiose plans to use the computer with all my kids in all my classes . . . I am beginning to realize how little I know and how long it takes me to experiment with the word processor at home. How can I do that with kids in a 45-minute period? . . . It is only in the last week that I have been confident enough on the computer to do my school papers on it rather than typing them or doing them by hand, and I'm still not willing to try some things because it will take me so long just to figure out how to do it. . . .*

Carolynn Swanson  
project journal

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## CHAPTER FOUR:

### Training Students (And Teachers!)

### To use Word Processing

*I was amazed at how little information I had to have to get the kids started on word processing.*

Linda Bischoff  
final interview

*It's neat for students to see that they can teach the teacher, that it's a two-way street.*

Alma Harris  
final interview

*The students taught each other more about word processing than I taught them.*

Carolynn Swanson  
final interview

*Teachers should know word processing inside and out before they start.*

Harris Thomas  
final interview

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# How Much of a Computer Expert Do I Need to Be to Get Things Started?

Teachers considering incorporating word processing into classroom writing activities should be literate in computer fundamentals—that is, they should be able to distinguish among hardware, software, and firmware; they should know how to load, initialize, and use a blank disk; how to load a software program; and how to run a printer. They should be able to type in some text on a screen, edit it, and print it out with their word processing software. All of the teachers involved in this project had these skills when they began their writing activities with computers, albeit with varying degrees of confidence.

Where the project teachers varied the most, however, was in the level of fluency and comfort with their respective word processing software packages. Successful writing activities were conducted by teachers who were thoroughly familiar with a particular package—teachers who had deliberately spent a considerable amount of time becoming confident and knowledgeable with even the most sophisticated word processing tasks the computer was capable of performing.

On the other hand, equally successful teaching and learning happened in classrooms where the teacher knew far less than the students about either word processing or computers in general. In one instance, the teacher felt so unprepared to teach word processing that she simply created the opportunity for one motivated student with independent study skills to teach himself, and he became quite an enthusiastic, competent user. Still other teachers were comfortable and successful only knowing the most basic entry-level word processing skills—those required to do simple text entry, editing, and printing.

The extent to which the teachers felt it necessary to be thoroughly knowledgeable about word processing prior to working with students seemed dependent upon three things: teaching styles, the degree of existing computer knowledge among their students, and the age of their students.

Several of the teachers remarked on how roles changed when computers were brought into the classroom (or when the classroom was taken to the computer lab). Students were often already competent or quickly surpassed their teachers in computer skills. Students taught other students.

Teachers referred computer questions they couldn't answer to the class "expert." Or, together, teachers and students dug through the software documentation and figured out the answers. Teachers learned along with the students, functioning more as consultants or learning managers than experts-with-all-the-answers.

The experience of discovering together has an equalizing effect on everyone in the classroom community. Some teachers find that experience rejuvenating and stimulating—a kind of social dynamic that invigorates the classroom and enhances learning. Teachers who are not comfortable in the situation of knowing less than, or learning along with, students, would do well to master their own use of the computer thoroughly before teaching their class.

Project teachers with older students (high school), and teachers who had many computer-competent students in their classes seemed more willing to be less than word processing experts in their classrooms. Middle school teachers, on the other hand, generally stayed several steps ahead of their students, and kept things relatively structured.

At both levels however, students were helping other students, using each other as resources and advisors. Cheerful collaboration and cooperation among the students became a natural, almost predictable by-product of using computers in writing process activities. Both middle and high school teachers frequently found the best "teachers" of word processing were the students themselves.

## What If My Students Don't Have Any Keyboarding Skills?

In the best of all possible worlds, in the ideal school district with the ideal, appropriately sequenced computer curriculum, all fifth or sixth graders would receive several weeks of keyboarding training to prepare them for middle and high school word processing and general computer use. There is no question that fluency at the keyboard makes a real difference in how much benefit students can gain from the word processor. Composing at the screen is especially hampered if thinking about ideas is constantly interrupted or eclipsed by hunting for letters. One seventh grader interviewed during the project grumbled, "If they're going to give us these computers, then they really oughta teach us how to type, right?"

Right. "They" oughta. But the reality is, until computer curriculums are solidly in place, and computer labs are part of the fabric of late elementary/middle school life, the students coming up into secondary classrooms for the next few years may or may not have keyboarding skills in their educational toolkits. (Three of the middle school teachers in the project saw the first year of middle school as the ideal time to offer a short, exploratory computer/keyboarding course to students. As Harris Thomas, seventh grade reading and geography teacher, put it, "It would be nice to link their desire to work on the computer with learning keyboarding. It's the perfect time to do it, instead of waiting for a high school typing class.")

Another reality is that, faced with a class full of students with little or no keyboarding skills, writing teachers who are already somewhat ambivalent about becoming quasi-computer teachers, are often even less interested in becoming typing teachers, or providing very much classroom time for students to become proficient.

Several teachers early in the project expressed reservations about attempting to initiate writing activities on word processors when the students couldn't type, and requested typing tutorial software. (**Microcomputer Keyboarding**—see below—was ordered, but it didn't arrive until after the projects were underway.) The teachers decided to forge ahead despite the lack of keyboarding and see what would happen. To their surprise, typing was much, much less of a problem than they had anticipated. Students either had enough sense

of the keyboard to get started, or they hunted-and-pecked happily away, often achieving remarkable proficiency.

Although they acknowledged the need for keyboarding, the unanimous feeling among project teachers was that *a lack of keyboarding skills was not at all a reason to deny students the chance to experience writing on a word processor. The benefits of exploring such an invitation to write far outweighed any initial problems with slow typing.* If the teachers had waited until everyone in their classes had basic keyboarding skills before beginning word processing/writing activities, they'd still be waiting.

Nonetheless, the acquisition of keyboarding skills should be strongly encouraged and provided for, since the sooner students become fluent at the keyboard, the sooner they can make the best and most productive use of a word processor. Although their students managed to do fine without formalized keyboarding training, Harris and Tom are going to do just that, and have decided to expand their writing/word processing activities next year so as to include time for typing tutorials.

Fortunately, keyboarding skills are not difficult to learn. There are several software programs available which can be used in the classroom or computer lab to teach typing. One of the best is **Microcomputer Keyboarding** by Southwestern Publications, for the Apple computer.

This tutorial software consists of four program diskettes containing thirty typing lessons. The lessons start out with an introduction to keyboarding skills. Lesson One introduces the student to the home keys and finger position. The lessons progress through the various letters with reviews every third or fourth lesson. The third and fourth diskettes include lessons about typing technique, key-stroke speed, paragraph speed and speed tests.

**Microcomputer Keyboarding** makes excellent use of computer graphics as a teaching tool. Seating posture, finger position and keystrokes for the various letters are graphically represented; some demonstrations incorporate animated computer graphics. The package includes four back-up diskettes, and a student manual is available.

## Keyboarding

Not being able to type takes more time, certainly, but I wouldn't worry about it. I thought it was going to be a real problem, but it wasn't. Obviously, the kids who are typists are faster, but the kids who haven't had typing still managed to produce. There was far less frustration than I would have expected. I know several teachers in the project were concerned about getting typing training for the students, but I wouldn't even worry about it. Kids hunt and peck just fine. And those that want typing can get it.

**Carolynn Swanson**

For most of my students, keyboarding was not a problem at all. It just didn't stop them from getting involved and enthused. At first they paired off—a non-typist would grab a typist, and the non-typist would feed the information to the typist. It didn't take but five or ten minutes for them to say, "Hey, move over, I don't care if I can type or not!" For advanced writers, though, the lack of keyboarding skills did get in the way. They were thinking faster than they could type. So they wanted to use the computer more as a fancy typewriter than as a place to compose.

**Linda Bischoff**

It seemed to be a problem at first, because they had to go very slowly. But I didn't teach keyboarding at all. I just didn't want to. But something very interesting started to happen. The students who'd had a little typing, or who'd worked with computers would say, "Look, you guys, if you'd just put your fingers on the home row . . . let me show you . . ." They were teaching each other typing! Also the kids that hunt and peck are almost as fast as I am with my standard "home row" routine! Typing ended up not being a big impediment at all.

**Didi Ryall**

It didn't seem to be a problem at all. I even offered them some typing software, but they weren't interested. They wanted to go straight to composing.

**Nancy Thomas**

Kids need to be trained at some agreed upon grade level to use the computer as a word processor, so that they can come into content classrooms and just use it. That would be the ideal, but until then, small groups work well, if there's a faster typist in the group. Hunt and peck does take a lot longer.

**Luann McVey**

We did not give them the typing tutorial—there just wasn't enough time in the day, especially with four computers and a hundred kids . . . Basically they would hunt and peck. It frustrated them sometimes because of the amount of time they'd spend on the computer. It frustrated the people more that were waiting in line to get there next . . . but over all it didn't bother them that much . . . it bothered us sometimes . . . when we had to think about re-scheduling because they only got two paragraphs done . . . Some kids started to pick it up pretty fast as two finger typers.

**Harris Thomas**

We became convinced that ideally at the entry level to our middle school we need some kind of keyboarding (course), even if it's just two short weeks at the beginning of the year . . . to have some sort of balance of the home row keys . . . then they could hunt and peck everything else. At least some compromise . . . otherwise I think we'll always be stuck with hunt and peck . . . if we had had the whole year to work this up, we would have tried the typing tutorial, just get them up to speed before they actually got on the computers.

**Tom Drazdowski**

# How Should I Train My Students?

As we discovered during this project, word processing can be effectively taught to students in a number of different ways. In planning for training, there are several things to consider: computer availability relative to the number of students, the level of teacher and student expertise, and preferred teaching style. Training strategies used among the project teachers ranged from teaching large groups in large labs to simply allowing an individual student to teach himself. Strategies are listed below according to computer availability. In addition to teacher commentary here, training methods are discussed in each teacher's individual writing activity description.

## Using a large (15+ computers) lab:

Nancy Thomas had the opportunity to experience training in two worlds, the classroom and the lab. She was able to use a large computer lab (the permanent, classroom-sized lab in an adjacent elementary school) for one 30-minute introductory session to Bank Street Writer, for each of her seventh grade classes. After that, additional training and computer time happened on the single computer in the back of her classroom. Students teamed up and rotated turns at the computer on a daily basis for the rest of the school year. Using the large lab as a collective starting point seemed to work quite well. The basics could all be demonstrated at once, while refinements and individual problems could still be handled on the computer

in the classroom. The advantage of one large lab for training is of course that everyone learns together, and gets more computer time.

Because she was using a large lab, and because she only had 2 or 3 students in each class that hadn't ever touched a computer before, Nancy was able to spend relatively little time formally training the whole class: a 30-minute overview in the classroom before going to the lab, 30 minutes in the lab itself trying out the software, and 10 minutes of review back in the classroom. From her journal:

*. . . Well, I only broke into a cold sweat once, so it wasn't so bad. Today I took my third period language arts class to the computer lab for thirty minutes to teach them: rules for using the computer, parts of the computer, and Bank Street Writer . . . I made sure that the three students who had no previous experience were paired with someone with experience . . . I felt relieved that most all of the kids have basic knowledge of computers so that I won't have to spend time teaching how to turn it off and on . . . Now I'm ready to assign five students a week (or maybe ten) to do their assignments on the computer. I want that machine humming all day long.*

Back in the classroom, she learned along with her students:

*At one point, I still didn't know how to do a certain kind of editing on Bank Street. When a student called me back to help with that, I simply said, "OK, let's*





see if we can figure it out," and together we discovered how the find-and-replace command worked . . . The first couple of days I spent a lot of time in the back of the classroom, available for help, but very quickly, the students caught on or just helped each other without me.

Although there was no opportunity during the project to try other uses of a large lab, John Wyatt recommended using a large lab for a high school semester class in word processing. His experience with sequenced word processing training in the small lab, led him to believe that:

*. . . the math and science people have gone the right way. first set up a lab, have computer classes, and then students can use computers on their own as they need, or wish to.*

### Using a small ( $\approx 8$ computers) lab:

All the high school teachers (John Wyatt, Carolynn Swanson, Shirley Carlson, Linda Bischoff, and Alma Harris) pooled the computers they had been given to use for their classrooms, added a couple more provided by the school district, and were able to create a small computer lab of seven computers and three printers. John Wyatt physically set it up, scrounging up several well-used science lab tables and placing them around the perimeter of a large (12' x 24') glass-enclosed office that was in one corner of the high school library. The idea was that John would use the lab to teach word processing to interested students during the daily school activity period. The other teachers would bring their classes down to the library and



rotate their students through the lab in small groups of seven or so for training sessions, as well as writing activities. The students not working at computers would do assigned work in the library area outside the lab.

In the lab, John eventually developed a detailed training sequence for teaching AppleWriter IIe. A copy of this, as well as a description of the procedures he used can be found on page 85.

Carolynn and Linda both rotated groups of students through training sessions of one or two class periods, briefly going over basic commands, and then allowing students to work on their own with the "Command Summary" guide available to use. Linda describes her method as "immersion": "immersion":

*The students had the list of the commands, but I virtually just threw them right in, rather than breaking it all down step by step. I did carefully explain: how to treat it, it wasn't a toy, etc. However, I consciously made the decision not to spend a whole period going over commands as a group. (With ninth graders, they'd be asking the same questions over again the next day, anyway!) I gave them a paragraph that I had deliberately typed with mistakes so they could practice correcting and editing on the word processor, using their command sheets. (For an example of this see "Big Red Riding Cape," page 80.) But . . . I had them work at their own speed, because that's what had worked for me, when I was learning. I was willing to buck up and throw a period away if need be if they needed the time. But it worked out well; they used their command sheets on their own, and moved into the writing activity when they were ready.*

The mutual teaching and learning that Carolynn describes was a common experience for several of the teachers:

*I taught, they taught, we taught, we learned, we fell apart, we gave up, we started over. It was definitely a "we," and in some cases it was, "You (the student) tell me (the teacher) how to do this, because I don't know!" The kids are not afraid of the computer. They will push the buttons just to see what happens. They'll discover things I wouldn't take the chance to find out . . . I'd say, "Fine, you figure it out, show him, and then show me!" . . .*

*I felt at first I needed to know all the answers. I knew I didn't when I walked into it, but the kids did just fine without my knowing everything . . . That process that we all went through of just doing it, just pushing on through whether I was totally comfortable or not has made me much more willing to do it again. I'm still not an expert, but I'm comfortable.*



Although Alma had some experience with word processing, she left the training completely in the hands of her senior students who were interested in learning and teaching each other. She had several students who were already familiar with Applewriter IIe either from the student-teacher workshop (see below) or from John Wyatt's activity period training sessions. From her journal:

*Today I made the computers in the lab available for the first time. During first period, only Barbara and Karen worked on the word processor. Karen instructed Barbara and our UAJ (University of Alaska, Juneau) observer, Kathy. Kathy was really excited and took a copy of the "Command Summary" with her.*

*Second period was great. All the students entered the lab and sat down at the computers. Robin taught Andrew. Gail helped Yvonne. At three of the computers, pairs and a trio worked together. At the other three computers, individuals worked. All helped one another. I was even able to answer a couple of questions!*

### Using one or two computers in the classroom:

With the exception of Didi Ryall, the middle school teachers (Tom Dradowski, Harris Thomas, Nancy Thomas, and Luann McVey) all had one or two computers in their classrooms. Training necessarily involved large group demonstrations, along with some kind of rotation system to allow each student to practice word processing skills individually.

Luann, a seventh grade biology teacher, was concerned about taking too much time from her

science content, so she deliberately chose a class to work with that already had some computer expertise:

*They knew even more than I thought. There was so much expertise in the class that one session to introduce the computer and Zardax to the whole group was enough. I was able to assign an experienced student to each small work group . . . at first I hovered over them to make sure they knew what they were doing. Then I realized I was just being a mother hen, and that they didn't need it. They let me know when they needed help, and often they just helped each other.*

Didi had perhaps the most enviable ratio of students to computers of all. Her seventh and eighth grade Special Ed classes were small, from five to fifteen students, and she had four computers to use in the room:

*I could actually create a situation where the kids could all be at computers, while I was at a computer as well, and it was basically do-as-I-do. For the larger class, I did one whole group demonstration on Homeword, and then they were free to fool around with it on their own.*

Tom and Harris were team teaching, with four computers for their combined classes of forty students. Harris describes their early apprehension:

*We had a lot of nervous anticipation about it at first—wondering how we were going to teach this stuff, since we were just learning it ourselves. But when we actually did, we found out that the kids weren't nearly as apprehensive as we were. We initially had a grandiose plan of getting into a big hardware overview and all of that, but just scuttled it, and went right to the real stuff.*

Tom: First each of us took half the class, gathered them around us, and explained the various commands at the computer. Then we paired the kids up, trying to combine experienced kids with those who'd never used a computer before, and over a two week period, cycled every pair through the Apple introductory tutorial program, Apple Presents Apple. Then we just threw them in the water, and said, "If you have any problems contact us."

Harris: We went right to: OK, kids, here's how to turn it on, get your screen up, here's CREATE, now do it. We quickly got them into writing, and then added on how to save, and recall, and then gradually gave them things they wanted to know as they asked for them: what changes margins? how do I double space? how do I underline? how do I make my paper look better? Then it became very natural. We didn't have to spend much time.



## Using a "rolling lab":

One method of organizing computer availability is essentially a lab on wheels—where all the computers in a building or a department are on rolling security carts, each with six-plug power strips, and surge suppressors so they could be easily connected and used together in a normal classroom. Although this initially entails more expense, it would enable the quick and easy creation of a temporary computer lab for training purposes that could just as easily be dismantled for distribution to individual classrooms. This system was not available to the teachers in the project, but it's been successfully used elsewhere as a creative solution to the philosophical classroom vs. lab tug-of-war that often arises as computers become more common in schools.

## Using a joint teacher-student assistant training workshop:

The project teachers who were working with specific writing activities all mentioned the importance, and convenience of having students available who could be counted on to help other students learn to use word processing. A joint teacher-student assistant training workshop was held during the project in order to give interested teachers more training for themselves, and a model for training students, while simultaneously training student volunteers who wanted to become student assistants in the classroom. Three high school teachers—Alma, Carolyn, and Linda—attended, each bringing two or three of their students with them, for a full day Saturday training session, conducted jointly by the project co-directors, a computer expert and a writing process teacher trainer.

Using skills checklists, a sample text to correct (see pages 78-80), and computer writing exercises ("Accordian Writing" and "Invisible Writing"—see Appendix), both students and teachers learned word processing side by side. Upon completing their skills checklists, the students were awarded Training Certificates that identified them as competent writing assistants. (See page 82.)

Student assistants work very well in the classroom. As Carolyn explained:

*"They pick it up faster than we do as adults, and in the classroom they have more time to help other students than the teacher does. They sense that you really do need the help, and they feel like an asset, like they're part of a team. I used my assistant quite a bit. One was absent a lot, but two of them worked out very well."*

As well as creating trained student assistants for the classrooms, Linda and Alma noticed other equally important things going on as a result of teachers and students learning together in the same workshop:

*Linda: It was fun to go in with the students and watch young people on the computers because I hadn't ever really done that before. I was actually in a classroom, watching students work on computers, but I wasn't in charge. I was just one of them, learning. That alleviated a lot of fear. It was a great boost. . .*

*And becoming "certified" trainers was so good for my students' self-esteem. It did a lot for them and really made them feel important, when I'd say to the class, "Here are my key players—if I'm busy they can help you." . . . This year we didn't get so far that we were running into problems that I couldn't handle, so I didn't use them that much. But next year I plan to use computer writing activities for at least a quarter, and I will definitely structure in the use of student assistants for that.*

*Alma: Joint training is a terrific idea. Although the content was valuable, the relationship that developed between my students and me as we learned and worked together in that workshop was far more important to me than any of the actual technical things I did or did not pick up. It created a tone that was carried back into the classroom. It was very special.*

The teacher-student assistant training workshop, although a spontaneous, mid-stream creation, proved to be a highlight of the whole project, something that really made a difference in the classroom. A major regret was that it had not been initiated sooner in the project, and that all the teachers didn't have a chance to participate. The teachers who did attend felt a series of such workshops would have been helpful all along. The presence of the students created a lively sense of community and teamwork, and alleviated a great deal of teacher apprehension.

Yet, too, because students were present, professional discussions about the teaching processes that were being modelled were not as extensive as they might have been had the same workshop been given for teachers alone. A similar workshop just for teachers might have been very useful, as well. The project teachers had been given a few short workshops, and individual computers to work with over an entire summer prior to beginning their word processing classroom activities. However, they weren't really given much time after that to get together as a group—to "mess around" with

computers and kids, to share ideas about training classes, and, most significantly perhaps, to actually do some meaningful writing themselves on a computer, and share it with peers.

In summary, whether for student training assistants, teachers, or both, full-day workshops combining word processing skill building with significant writing activities should be given careful consideration as an effective way for teachers in a department or building to begin to integrate word processing into their teaching.

Such workshops could either be conducted by outside trainers who can model effective teaching strategies, or they could be organized by the teachers themselves, but the growth and sharing that happened in our small workshop would indicate that such an approach would go a long way toward establishing a network of support and encouragement. For teachers embarking on classroom word processing for the first time, such support is invaluable.

## Training Teachers and Students to Use Word Processing: It's Simply a Matter of Style

by

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and

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*I let them play around with the computer and work at their own speed because that's what had worked for me when I was learning.*

**Linda Bischoff**  
final interview

Over the years, teachers have been told about the importance of considering students' "learning styles" and assessing their own teaching styles" before organizing for the presentation of classroom instruction. Much of the knowledge and insight gained during the course of this project supports the importance of this concept. Additionally, we have discovered that when technology is one of the main instructional ingredients, and it is relatively new to teachers, there is yet another thing teachers need to consider: their own learning styles regarding technology. By this we mean the ways in which they cope with their initial ignorance of the subject, and the level of mastery they ultimately choose to carry with them into the classroom.

### Teachers' "Technology Learning Styles"

We discovered that the words "learning styles" took on added meaning when applied to teachers who were learning technology-related subject matter, like word processing. It appears that a teacher's "technology learning style" may be different from what we might know to be a teacher's "learning style" for non-technology related material. This difference in "style" appears to be caused by the teacher's fear of learning the computer. Some of the teachers seemed less "open" to the concepts and skills to be learned than might otherwise be expected. In addition, the teachers were less verbal in expressing their needs, likes and dislikes about the nature and quality of the training they received. The teachers later said that they were afraid to act "dumb" or simply did not know "the right questions to ask" at the time.

We also observed that how teachers initially learned word processing technology was an important factor in determining the way(s) in which the teachers initially taught word processing in their classrooms. We found that the teachers needed to: 1) develop more understanding about their own styles of learning technology-related material and 2) know how they could effectively present technology-related material, in this case, word processing, to their students.

In our experience, this generalization held true. The teachers in this project often used teaching/training style approaches with their students that closely reflected their own style of learning word processing.

### High-Tech Stress

A popular Charlie Brown poster once read "It's hard to learn new math with an old math mind." Well, for many of us, learning "high-tech" skills with our "low-tech" minds seems an all too formidable task. But being asked to learn about computers and to incorporate them as a meaningful part of an instructional program at the same time, can send stress levels right through the ceiling! Such was the case for the teachers on this project.

In this situation, the teachers were the "students" who needed to be taught the use of the computer and word processing software for use with the writing activities that were being carried on in their classrooms. The teachers were asked to learn these skills and later teach them to their students. Our overall goal was to determine whether or not the availability and use of word processing in the secondary classroom had any noticeable effects on the quantity and/or quality of students' writing, and their attitudes towards it.

The teachers on the project were provided computer hardware, introductory hardware training

and software selection and evaluation sessions in the spring, and a summer designated as a time in which to "practice" and "develop" skills and activities with their chosen word processing packages. By fall, however, the teachers were still insecure and apprehensive about the technology. But since the time for the beginning project activities in the classroom was now at hand, these teachers (like many others across the country), had to continue to learn the technology even as they taught it.

Each teacher's degree of comfort with the simultaneous demands of this situation varied enormously. It was not easy for the teachers to attempt to simultaneously "teach and learn" about the use of word processors in the writing process. Each teacher's individual response to managing this set of dual demands seemed based on three elements:

1. his/her general learning style,
2. his/her existing knowledge about computer hardware and/or use of word processing software, and
3. the level of confidence needed to effectively apply that knowledge in a classroom that contains computers.

These elements combined to become what we called a teacher's "**technology learning style**." Over time, the trainers on the project became more aware of the "technology learning styles" of the teachers. These factors had significant impact on the teachers' interests in and attitudes toward the use of word processing in their classroom writing activities. Therefore, on-going efforts were made to provide training sessions that more closely addressed their learning preferences.

As with most teachers learning technology for the first time, our teachers expected too much of themselves too soon. They got especially frustrated and depressed when they learned that word processing was nowhere near as hard to learn as it was time consuming. "Where will I find the time to learn all of this?" they would say, and "How will I stay ahead of the students?"

"Staying ahead of the students" was a big task for the teachers who wanted to have a complete grasp of the word processing skills before they went about teaching it to their students. To achieve this, some of the project's teachers took a graduate level class at the local university to "shore up" their skills. For some of the teachers, "knowing it all" was not a need and they decided to "learn along with the kids." For still others, the obstacles of the keyboard and the other "headaches" associated with the technology caused them to decide that

the best way for them to help their students to learn word processing was to "open the door to the lab and get out of the way."

What's important to note in all of this is the fact that each teacher on the project came away with positive experiences with the use of word processors with their students. The amount of time and effort spent on learning word processing was different for each teacher. Each teacher's "**technology learning style**" dictated for them what they "needed to know" before they had "peace of mind" and "confidence" in their own ability to use word processing and felt "prepared" to teach their students.

### **Hindsight is a Wonderful Thing**

Looking back on it now, this project truly became as much a "learning experience" for the trainers as it was for the teachers. It became clear that special considerations must be made when preparing training programs for teachers on the use of word processing (and we suspect most other types of computer applications), and that teachers must be provided a wide variety of learning options based on their "**technology learning style**" needs. Highly structured sessions as well as "supervised labs" need to be offered. Opportunities for teachers to make practical application of their newly acquired skills is the key.

Only as we learned these truths by our mistakes did our training techniques and materials improve. Without even fully realizing it at the time, we created a training program that accommodated many different "technology learning style" needs.

For us, these realizations have been hard won. The results of our initial teacher training sessions fell short of our expectations. The fact that the teachers remained uncomfortable with the technology late into the project graphically indicated to us that we had missed an important step in the training design process. We now realize we did not properly assess what we now know to be the "**technology learning styles**" of the teachers before implementing the training program. We also came to recognize that the early training sessions and activities that we provided did not "empower" our teachers with the right kinds of knowledge, skills and attitudes about the use of the computers for teaching writing with word processors. This concept of "empowering" a teacher is critical to determining how the teacher will shape their "**technology teaching style**" in the classroom. Teachers need to know that they "can learn this stuff" and

use it, or simply help their students to use it effectively.

## Tips for Teachers About to "Tackle" the New Technology

If you decide that you are ready to take on the new technology and want to put word processing to work in your classroom, you're going to have to learn at least a little about it for yourself first. *Recognize that the manner in which you feel the most comfortable learning word processing may or may not be the best way to teach your own students. It will be just one of several possible training approaches you could use.* But, meet your technology learning needs first. Be assertive about the kind of training you want. Plan for your students once inside your own comfort zone.

Entering the world of technology for the first time can be simultaneously stimulating—and humbling. As many have said, technology is a "great equalizer" or, put a little more graphically, a real "meat tenderizer"! It's a sharp reminder of what it's like to learn something that, for many of us, has little or no connection to anything we've ever learned before. It can re-sensitize us to how stressful learning completely new things can be—a task we (perhaps cavalierly) ask of our students all the time—and something we may not have truly experienced in years.

Consider using your technology training as an opportunity to not only become conversant in word processing, but also to fine tune your perceptions and understanding about what your students are experiencing, and what strategies and help they might need.

## Identifying Your Technology Learning (and Teaching) Style

As you seek out or plan word processing training sessions for yourself—and ultimately—your students, take time to think about:

1. **your knowledge/comfort level with computers.** Are you:
  - a "cold, raw novice" who's basically a little intimidated and put off by the whole thing, but you feel it's somehow good for you? (Sort of like going to the dentist?)
  - a novice who's fairly receptive and no longer "afraid" of computers as much as just uninformed about them?
  - a comfortable computer user that wants to know more about word processing?

2. **the way (style) in which you learn technology-related subject matter.**

The number and degree of learning aids you'll need to make yourself comfortable with basic computer literacy and word processing will depend upon your experience and your own personal "fear/discomfort factor."

Generally the more uncomfortable and inexperienced you are, the more you will probably want structured support in your learning, and the longer you'll want it. When you think about learning word processing, do you think you'll want or need:

- a structured, step-by-step sequence of instruction, with visual support materials (wall charts, skills checklists, brief easy-to-follow guides), and direct support and demonstration?
  - a brief overview and teaching of basic survival skills, and then some time to just try it on your own, at your own pace, learning subsequent skills as the need arises?
  - the chance to just work through the manual on your own and teach yourself, using the instructor mainly as a resource?
3. **how firm a grasp you feel you need to have on a topic before you teach it.**
    - Do you feel you should know word processing inside and out before you take it into the classroom?
    - Are you comfortable acknowledging less than total knowledge, and learning along with your students?
    - Do you feel autonomous learning is appropriate in your classroom? Do you actively promote it?

4. **how you want to measure your students (or your own) mastery of word processing.**
  - Do you need to know exactly what your students are learning as they learn it? (That is, do you need to have specific assessment tools like checklists for measuring the acquisition of discrete skills?)
  - Or, are you comfortable letting students learn more randomly at their own pace, and measuring more holistically?

## Choosing the Training Model That Suits Your Style

Once you've answered the above questions, you should have an overall sense of your own technology learning style profile. Generally, the more you answered "YES" to the first question in each



list, the more you will be comfortable with a training approach that provides you with the maximum amount of structure, direction, and support.

The three styles of training models suggested below are listed according to degree of structure and sequence: from most to least. These options were developed as a result of feedback from the teachers during the project. Many of our "inspirations" for training were byproducts of the "perspiration" generated by our own form of "high-tech stress!" Despite what often felt like a "crisis-management mode," however, we did find that these models complemented the various learning styles of the teachers in the project.

### **WP Pro (Word Processing Professional)**

This training approach involves the most direct teaching, and the most sequenced plan of instruction. The **WP Pro** embodies all of the activities that are used in both the **WP Coach** and the **WP Booster** models and much more. It presents ideas and activities that constitute a complete course on the use of word processing in the classroom. It carries with it the expectation that a teacher selecting this model wishes to be involved in a full range of training activities.

After a teacher has completed a training program of this type, he/she should feel fully competent to use and teach word processing in his/her classroom. This type of program may also be used successfully with novice computer users of any age. Teachers may, at any time, adapt this model by selecting out those activities and materials that he/she feels are best suited to their learning needs of those of their students.

### **WP Coach:**

**WP Coach** is a somewhat less structured model that presents ideas for learning or teaching the "survival skills" of word processing to teachers (and/or students) regardless of computer ability. The necessary supports of condensed manuals and skill checklists are suggested, but this approach has been designed for the teacher who answered "yes" to the second question in each list. Using this model, a teacher should be able to enter his/her classroom with a moderate number of skills on the word processor. More importantly, they should have developed a good understanding of how to help their students find the answers to their questions on their programs or in their software manuals. If you love the excitement of "learning along with your students," then this is the training model for you!

### **WP Booster**

If "technologyphobia" has gotten the best of you, then consider becoming a **WP Booster**! This model is for teachers who want to be just that . . . a "booster" or "supporter" of your students' right and need to learn the use of word processing. Even if the keyboard and other "high-tech headaches" are too much for you to cope with right now, it doesn't mean you have to deny your students the opportunity to learn about word processing.

This model suggests ways in which you as the teacher can take whatever level of knowledge you have been able to achieve and use it to encourage, facilitate and "boost" your students excitement and interest in teaching themselves and each other. This is a valid approach that has the added "bonus" of giving the "techies" in your classroom a chance to "shine."

### **What's in each Model**

#### **WP Pro:**

If you have decided that you need or want to "know it all" before teaching word processing in your classroom, then look for a training program that:

1. has been created by teachers, for teachers. If none exists in your area or is just now in the planning stages, be a part of it so that you can be sure it will meet your needs.
2. provides training materials that are well written and clearly indexed. All courses should include a comprehensive outline of learning objectives and a correlated skills checklist that indicate the standards for performance by which teachers may evaluate their progress.
3. initially provides you highly structured lessons that include extremely directive support materials. Condensed software manuals, quick reference command summary charts, carefully guided activity sequences that relate to specific skills to be accomplished on a skills checklist will provide you the kind of help you need and want. (See pages 78-79 for samples.)

(Note: Prior to this session, a class on the parts, assembly and operation of the computer, diskette and printer should be required for any participant who has never before worked on a computer.)

4. allows you to concentrate on "moving your fingers" before you are asked to be creative and to "move your mind." Early word processing lessons should address only the "mechanical skills"



needed in learning the use of a word processing package and not focus on techniques for integrating their use into subject matter curriculum. 5. offers the "crutch" of prepared activities and exercises during the first few weeks. These types of activities go a long way toward lowering your anxiety level and allow you to give your undivided attention to the task of learning the "mechanics" of word processing. (See "Big Red Riding Cape" on page 80.)

6. structures exercises and skills to be learned in a logical, hierarchical order. Make sure the experiences take you from the simple to the complex. Ask that "cut-off levels" at different skill levels are noted. Skills needed for "survival," "competent," "expert" or "hot shot" levels of use should be indicated.

7. later on, provides you with assignments that:

- a). push you "out of the nest" of instructional support that you have been in up to this time, and
- b). that force you to apply your "mechanical" skills to more creative subject-related uses of word processing.

A first step in accomplishing this may be your development and use of "activity files." These are activities in which you use the word processor to create a document file that resembles an "electronic ditto masher."

Here are the steps that will help you create an exercise similar to "Personal Pronoun Predicament" shown on page 81:

- a). Select a subject matter concept(s) on which you wish your students to work.

- b). Using your word processing skills, create an exercise for each concept and save them onto your word processing data disk. (The activities should be designed to have the users practice both their knowledge of the concepts presented and the word processing skills that have been taught in the classroom.)

- c). The file should then be electronically "locked" so that it cannot later be written over or deleted by the students.

- d). Make at least one back-up copy of the disk and apply a "write protection tab" to each. (Write protection tabs provide the disk extra protection against the possible alteration or deletion of your file(s).)

- e). Have the student "boot up" (start) his/her word processing program and load in a copy of the activity file diskette on which you have stored the files you created.

- f). Instruct the student to load in a particular

activity. Have the student complete the activity as described on the computer screen, and "dump" their completed work to the printer. If no printer is attached to the computer, direct the student to save the file of the work he/she has completed to that or the student's own data disk using a filename different from the one used for the activity. In this way, the teacher will always have the ability to check the student's work on disk or in hard copy from the printer.

(Note: As long as the students do not remove the write protection tab from the activity file diskette and electronically "unlock" the activity file and save their file of work under the same filename you used for the activity, your file will not show any evidence of having been used. Each time that file is assigned for use by another student, it will come up looking as perfect as it did when you created it.)

8. encourages teachers to make creative use of their skills by means of regularly scheduled and supervised "lab sessions." These sessions should be structured to provide teachers with a few well chosen tips and teaching ideas by the trainer before teachers are allowed to run free with their own word processing projects. At all times, helpful advice and good technical support should be available.

9. provides ideas about how you can extend your skills. Opportunities for learning about the use of software packages that work with and complement word processors should be planned. Teachers who wish to enter the "expert" realm of word processing should be encouraged to: a). improve their keyboarding skills with the use of good quality keyboarding programs (these are great for beginners too), b). use spelling checker and thesaurus programs, c). experiment with font enhancement and publishing programs like **Fontrix** and **Newsroom**, d). learn graphic utility programs like **Print Shop** to "dress up" their final word processing products.

10. last, but not least, provides acknowledgements to teachers for the time and effort that they will have to put into learning about word processing and its use in the classroom. Commendations can be noted in the school district's newsletter or certificates of appreciation distributed. Incentives for taking refresher or advanced courses should be developed. Courses of this type help teachers to keep their skills sharp and allow teachers to share the teaching experiences that they have had with their colleagues.

## WP Coach

The **WP Coach** model only requires that you follow steps #1-6 as listed in the **WP Pro** model listed above. A training experience of this type will allow you to go into your classroom with word processing "survival skills" in hand and the opportunity to challenge yourself and your students to learn the rest of the skills you may need as you go. Students who wish to help in this effort, can be encouraged to participate in a Word Processing Training Assistant program. This workshop can be run by a word processing "pro" from your school district or local university. It should take place after school hours and be purely voluntary on the part of the students who participate. The students should be given the opportunity to learn some new word processing skills or just "show their stuff" on the word processor to the instructor(s) in the class. The students should be provided a skills checklist that outlines those skills that the instructors have determined to be essential to making that student a capable and knowledgeable Word Processing Training Assistant in the classroom. Upon successful completion of all the skills on the checklist, the students should be awarded a Word Processing Training Assistant Certificate. This certificate will help to identify a student as one whose word processing skills have been checked out and approved. For the **WP Coach**, these students will make valuable "Assistant Coaches" and help to move the effort of learning word processing in your classroom yards ahead!!! (See sample skills checklist and certificate on pages 78, 79 and 82.)

## WP Booster

Even if you decide that you will be most comfortable playing the role of a **WP Booster**, you aren't going to be let off the hook completely when it comes to getting some training on the use of the computer and the word processor. Having the keys to the computer lab is still not enough! You owe it to yourself and your students to at least become moderately "coversant" with word processing. For that reason, we suggest you find a training program that can provide you with at least the amount of training we have outlined in steps #1-4 or 5. In addition, talk to other teachers and scan computer classroom magazines for things that will help your students help themselves. Get copies of all of the teaching materials made available to you in the teacher training course and give it to the kids. Materials of this type will be "life savers" when the

students have questions you can't answer. Better yet, enlist agreement on the part of a number of your students to attend the Word Processing Training Assistant program. Having these "word processing wizards" in your classroom will go a long way in lessening the pressure you may be feeling. By encouraging the students in your class to become a "community of learners," you will have helped them to realize their own ability to learn and to help others learn. This is an important lesson for anyone who is living in a world such as ours, where "lifelong learning" is and will be an essential survival skill.

Be sure you do your best to provide the students with whatever they need to support their independent learning adventures and then stand back. You will be as proud and amazed at their accomplishments with the word processor as you would if you had taught it to them yourself!

## Tips on Teaching Word Processing to Students

These days even "high-tech" teachers find themselves in an interesting position when faced with the task of teaching computers or computer-related skills to secondary school students. There are some realizations and new understandings that teachers in the "information age" need to consider when planning for instruction where computers are involved.

For starters, recognize that, like teachers on this project, none of the students in your class will learn these skills the same way. For some of your students, the structured approach will be best. For others, handing them the diskette and the manual will be sufficient. And don't forget the students in your class who could far better teach the class these skills than you could even after a month of Sundays worth of additional practice!!!

So what's a teacher to do???? . . . Here are some tips:

1. Plan "technology learning opportunities" for their students that provide for as much diversity in learning style needs as did the program we ultimately had to produce for our "learners" . . . the teachers on this project.
2. Respect the fact that people of all ages have been "turned on" to computers now for a number of years. The fact that, you, the classroom teacher just learned it does not discount the fact that other people (including some of your students) have been learning lots of good things about computers for

a long time. Knowing what to do about that is very important.

- a). **Don't** force all your students from "ground zero" in learning the skills you wish to teach.
- b). **Don't** ignore the fact that a higher level of knowledge about the computer or word processing exists in your classroom. Seek it out and use it to your advantage. If you are unsure of the quality of that talent, set up a student Training Assistant Program (TAP) as described below and have the students' skills "checked out" by a word processing "pro" that you invite in for the session. This kind of "quality control" activity gives the students a standard of computer skills to shoot for and an understanding that you value all the computer knowledge that they have gained elsewhere in their lives.
- c). **Do** recognize that it's okay to say "I don't know, let's look it up," in the computer field. If you do, you'll begin to recognize that that is one of the truly beautiful things about the computer revolution and living in the "information age." Due to technology, we are now able to amass vast amounts of new information each day . . . more than anyone could ever be expected to absorb in many lifetimes! Therefore, as teachers, we should no longer expect ourselves to have *all* of the answers *all* of the time. Students must learn this too. Students must begin to readjust their thinking about new roles that they and their teachers will play in their education in the information age. They must learn that the "real skills" for living now and in the future are not just "knowing answers," but in knowing "where and how to find answers."

d). Relax and remember that you stand to lose a lot more student respect by trying to "fake" your way through it than by admitting the truth. Enlist your students help and cooperation. They will learn to become more responsible "partners" in determining the quality of the education they receive and enjoy having a chance to share in the teachers "spotlight."

e). Work to help create a "community of learners" in your classroom. . . . remembering that it is perfectly all right for you, the teacher, to be an active part of the "learning" going on in that community. It will turn out to be a more worthwhile learning experience for all of you.

During the course of this project, we found that a teacher's "technology learning style" often had a great deal to do with how he or she decided to teach the use of the computer and word processing in the classroom. This parallelism was not always conscious; rather, it was more often a reaction to the stressful demands of teaching and learning technology simultaneously. Teachers who can identify their own technology learning style needs can reduce this "high-tech stress" considerably.

Knowing how they best learn the technology, teachers can be much more assertive about seeking out appropriate courses or learning environments for themselves. And, by realizing that other styles exist, they will be able to select and/or design technology training models that are not only comfortable for them to use, but also will ultimately meet the various "technology learning style" needs of their students as well.

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## Samples: Word Processing Training Materials

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The AppleWriter IIe "quick command sheets" (pages 75-77), the skills checklist (pages 78-79), "Big Red Riding Cape" (page 80), and the Training Assistant Certificate (page 90) were all used in the joint teacher-student assistant training workshop, and subsequently by some of the teachers in their classroom training programs.

The "Personal Pronoun Predicament" (page 81) is an example of a teacher-prepared activity on disk which provides practice in word processing skills, as well as grammatical usage.

Quick guides to AppleWriter and Zardax for middle school students developed by teacher Dan Hall are on pages 83-84.

John Wyatt's detailed AppleWriter IIe training sequence begins on page 85.

# APPLE WRITER IIe COMMAND SUMMARY QUICK REFERENCE CHART

<u>COMMAND</u>	<u>FUNCTION</u>
OPEN APPLE ?	HELP SCREENS
CONTROL O	DOS Commands - disk operations initialize, catalog, rename, lock, unlock, delete
CONTROL D	DIRECTION OF CURSOR ON DATA LINE
position cursor one character to the right of the letter you wish to delete, then press the <b>Delete key</b>	DELETES 1 LETTER
CONTROL W	DELETES 1 WORD
CONTROL X	DELETES 1 PARA.
CONTROL N	DELETES ALL TEXT IN MEMORY
CONTROL R	REPLACES TEXT WHEN TYPING

## COMMAND

## FUNCTION

OPEN APPLE +  
LEFT ARROW

DELETES LETTERS  
TO BE MOVED

OPEN APPLE +  
RIGHT ARROW

REPLACES LETTERS  
THAT WERE MOVED

OPEN APPLE +  
CONTROL W

DELETES/REPLACES  
WORDS TO BE  
MOVED

OPEN APPLE +  
CONTROL X

DELETES/REPLACES  
PARAGRAPHS TO BE  
MOVED

CLOSED APPLE+  
CONTROL W

DELETES/REPLACES  
WORDS TO BE  
COPIED

CLOSED APPLE+  
CONTROL X

DELETES/REPLACES  
PARAGRAPHS  
TO BE COPIED

CONTROL S

SAVES A FILE  
(FILENAME , D2)

CONTROL L

LOADS A FILE  
(FILENAME , D2)

CONTROL P

PRINTS A FILE

(then type NP for "New Print")



# APPLE WRITER IIe

## CURSOR MOVEMENT COMMANDS

### PRESS

### THE CURSOR MOVES

LEFT ARROW

LEFT ONE LETTER

RIGHT ARROW

RIGHT ONE LETTER

UP ARROW

UP ONE LINE

DOWN ARROW

DOWN ONE LINE

CLOSED APPLE +  
LEFT ARROW

LEFT ONE WORD

CLOSED APPLE +  
RIGHT ARROW

RIGHT ONE WORD

CLOSED APPLE +  
UP ARROW

UP 12 LINES

CLOSED APPLE +  
DOWN ARROW

DOWN 12 LINES

CONTROL B

BEGINNING OF TEXT

CONTROL E

83END OF TEXT

**Apple Writer IIe  
Word Processing Training Assistant  
Skills Checklist**

Name \_\_\_\_\_ School \_\_\_\_\_

**Instructor's**

**Initials & Date**

**Skill to be Demonstrated**

-----

**The student has shown the ability to:**

-----

**1. turn on the computer and properly handle & care for diskettes.**

-----

**2. initialize a blank diskette using the initialization procedure on the Apple Writer IIe program disk.**

-----

**3. get to a workscreen area and enter text.**

-----

**4. locate and use HELP screens and other menus.**

-----

**5. edit text - move the cursor:**

-----

**- left one letter**

-----

**- right one letter**

-----

**- up one line**

-----

**- down one line**

-----

**- left one word**

-----

**- right one word**

-----

**- up 12 lines**

-----

**- down 12 lines**

-----

**- to beginning of text**

**- to end of text**

**( see back of page)      84**

- 6. delete text:
  - - data line direction changes
  - - letters
  - - words
  - - paragraphs
  - - all text in the computer's memory
  
- 7. insert or add text
  
- 8. replace text
  
- 9. move text - (delete & replace)
  - - letters
  - - words
  - - paragraphs
  
- 10. copy text - (delete & replace)
  - - words
  - - paragraphs
  
- 11. save a text file to the disk
  
- 12. load a text file from the disk
  
- 13. send a file to the printer

### **CONGRATULATIONS !!!**

**Because you have successfully demonstrated your ability to perform all of the word processing skills listed above, you are now an approved Training Assistant for the Juneau-Douglas Secondary Writing Skills Project. Please see your Course Instructor or your teacher to receive your Training Assistant Certificate.**

- 1) A) Position cursor at "B"  
B) Hit tab

- 2) A) Position cursor past "E"  
B) Use delete key to erase text  
C) Type in "HOOD"

- 4) A) Position cursor at "L"  
B) Hit space bar

- 5) A) Position cursor at "S"  
B) Type in " "

- 3) A) Position cursor at "A"  
B) Use delete key to remove text  
C) Type in "M"

1 BIG RED RIDING CAPE\_ 2

Once upon a time there was a little girl who had a red cape and a red hood. She was on her way to grandma's house with a basket of food because grandna<sup>3</sup> was hungry and too<sup>4</sup> lazy to feed herself. The girl had to go through the woods to get to grandma's house because<sup>5</sup> that's the kind of story this is. On the way she sang a song she wrote. Here are the words:

A tisket, a tasket  
A green and yellow basket  
I put a letter in the top  
And on the way I dropped it.  
I dropped it, I dropped it  
And on the way I dropped it.  
A little boy picked it up  
and put it in his pocket.

Yeah, the chickadee cooked. But it was this very song that got her into trouble. The wolf heard her from a long way off and he was hungry. He figured he had three options: he could steal the basket and eat the food; he could steal Little Red Riding Hood and eat her; or he could steal the song and make a bundle and never be hungry again.

6) Correct the other 13 errors as time permits

## Activity File #1

### Personal Pronoun Predicament

Filename of this Activity: Pronoun, D2

Word Processing Skills: file accessing, on-screen editing, reformatting text, save file/no save file options.

**Directions:** Move the cursor to the pronouns in the story. Delete those pronouns that are incorrect. When you have completed your work, the only pronouns that correctly fit the story should remain. When you have finished, print out your story and put it in your work folder. If there is no printer attached to your computer, save the work you have done onto this or another data disk. Use your first name and the first initial of your last name as your filename. Remember to save your file by typing in your filename and the designation of the disk drive location (ex. FILENAME, D2).

### Personal Pronoun Predicament

Sam and (me, I) were always getting into trouble. I remember one time when (him, he) and (I, me) were about ten years old, and Mom had told us not to bother (she, her) and Dad because they were packing up boxes in the basement for moving to Colorado. They were trying to get done as fast as they could before the movers came. They wanted us to separate our toys into three piles, mine, Sam's, and the ones that should go to Goodwill.

Well, of course we got into a big fight about this one green truck that (he, him) and (I, me) both thought belonged to each of us. (It WAS mine.) Sam kept jerking it out of my hands and putting it on his pile, and screaming and crying like a big baby whenever I took it back. Both (he, him) and (me, I) were pounding on each other pretty bad after a while. But neither Sam nor (I, me) would give up.

Pretty soon, my Dad started yelling. "You two guys better knock it off up there! If I have to come upstairs, you're both going to be in BIG TROUBLE!" Well, Sam and (me, I) were so mad at each other that we couldn't stop fighting. Then I heard Dad's footsteps stomping on the staircase. Uh-oh! Would he put Sam and (I, me) on restriction or spank us or what?! I tried to shove Sam off of me before Dad got in the room, but Sam kept crying and pounding on me and grabbing for MY truck.

I remember Dad's face was really angry-looking. I mean, he was **mad**. His eyes were BIG. "You two know your Mom and (I, me) are trying to get some work done. No more fighting! Since you can't solve this problem, I WILL!" And then he took MY truck and put it in the Goodwill pile, and said that neither Sam nor (I, me) could have it. Wow! Was I mad then! As soon as Dad left, I really pounded on Sam, and then we got in more trouble. That's another story. But that's the way it was with Sam and (me, I)—always getting into trouble.

---

NOTE: While this is primarily an exercise for practicing word processing skills, it's also being used as an opportunity for teaching a point of grammatical usage. Note that the work is taken from actual student writing. As research and practice have shown time and time again, the effective way to teach a skill such as this is not with ghost-written workbook drills—electronic or otherwise—but with the students' own writing, in the context of their intentions with a given piece, on a need-to-know basis.

---

Another approach would be to have students themselves deliberately create sentences using constructions incorrectly, and then "edit" and "proofread" each other's work. Whenever possible, use student-generated writing for any teaching of grammar and punctuation skills. The transfer and retention of new knowledge—in this case, a new usage skill, is greatly enhanced when it is taught in the context of the student's piece.

---

### **Word Processing Training Assistant Certificate**

This is to certify that \_\_\_\_\_ has successfully completed the Word Processing Training Assistant's program provided by Juneau-Douglas High School. This certificate identifies the student named above as a competent user and trainer of word processing skills for the software packages listed below:

**Apple Writer IIe**

**Zardax**

**Bank Street Writer**

-----  
**Signed,**

\_\_\_\_\_  
**Instructor**

\_\_\_\_\_  
**Date**



# Welcome to Zardax!

**Zardax** is a word processor. It will allow you to type and print out stories and other things you want to write. The steps listed on this page will help you begin to learn to use Zardax.

1. Put the Zardax diskette in the disk drive and turn the computer on.
2. Press return when red light on disk drive goes out and the MAIN MENU will appear on the screen. Insert your own diskette.
3. To answer the question WHICH?, press C for CREATE.
4. The system now asks you to give the document a name. The name of the document must start with a letter and can be up to eight characters long.
5. For NOTES, press RETURN.
6. Now you are ready to begin typing.
7. CAPITAL LETTERS—To begin a word with a capital letter, use the SHIFT KEY as you normally would. To write a word in all CAPITAL LETTERS, press the CTRL key once at the beginning of the word then press the SHIFT key at the end.
8. If you make a mistake, and you notice it right away, use the left arrow key to pick up the mistake. If you don't see it right away, don't worry about it because you can correct it later in the editing mode.

## Correcting Errors

Now that you are through typing, go back and reread your document and look for errors. To do this you will have to use some simple commands.

- CTRL B moves cursor to beginning of text
- CTRL R moves cursor to the right
- CTRL L moves cursor to the left
- CTRL D moves cursor down one line
- CTRL E moves cursor to the end of text

Ask teacher or someone who knows how to make corrections if you are having trouble. It's easy once you get the hang of it.

After you think the document is the way you want it, you are ready to SAVE it. If it isn't and you do save it don't worry! You can go back and change it later.

## Saving Document

1. Press ESC key. The INNER MENU will appear.
2. You guessed it! Press S for SAVE and your document will be saved.

## Printing Document

1. In the INNER MENU you will see PRINT. To print, just press P.
2. For now, answer the questions HOW MANY COPIES and at WHICH PAGE NUMBER to BEGIN, with the number 1.
3. Press RETURN after each question, and away she goes!

## Formatting Document

It is easier to show you how to format your document than to write it out on this paper at this time. Don't worry, it's easy and you will pick it up fast and have a lot of fun with it.

You know enough now to begin using Zardax. Have fun and ask for help if you get stuck.

Compiled by Dan Hall  
6th grade teacher  
Floyd Dryden Middle School  
Juneau School District

# Welcome to AppleWriter!

This program is a word processor. It will allow you to type and print out stories and other things you want to write. But it is different from a typewriter, because you have to learn some commands so the computer can type your story the way you want it to be.

1. Put the AppleWriter disk in drive 1 and turn on the computer.
2. Push "return" each time the computer asks you a question, three times in all.
3. Now you are ready to begin typing.

## Capital Letters

To make a capital letter press ESC once. The cursor will contain a `^` to let you know that the next letter you type will be a capital. You must do this each time you want to make a capital letter. \*If you make a mistake use the left arrow key to pick up your mistake.

## Saving Your Piece

Remove the AppleWriter disk from the drive and put the "SAVE" disk in.

When you are through, you need to "save" what you have typed. Press "CTRL S" then type a name for your file. Then press return.

## Moving the Cursor

To change from "text" mode to "move" mode, press ESC twice. The cursor will now contain a `^` to show you it is in move mode. The following keys can now be used to move the cursor:

Press	Cursor Moves
I	up one line
J	left one character
K	right one character
M	down one line

To return to text mode press space bar once.

## Printing Your Piece

1. Press CTRL P
2. To change margins type "?" after (Print/Program: and press return.  
To double space type "LI" and press return.  
To have it even on both sides type "FJ" and press return.  
So that the printing is not so close to the right side of the paper type "RM72" and press return.
3. Check to be sure the printer is ready to go, then type NP.

You should know enough now to enjoy AppleWriter II. Be sure you "Save" your work each time you are done. Then you can always go back and fix things without having to type is aaaaaaall over again!

GOOD LUCK AND HAVE FUN.

# Teaching Students to Use AppleWriter IIe

By John Wyatt

During his final interview, John described how he actually implemented his AppleWriter IIe training sequence during 30-minute activity periods in the small lab:

*In the lab, I'd stand in the middle of the room, where I could see all the screens, and only be a step or two away from any student who was unsure of what to do. In the beginning we'd do everything together—collectively we'd walk through whatever was being taught step-by-step. We took a computer apart and looked at all the parts, talked about how to treat it, how to handle a disk, load a program, get to a work space.*

*Then for a day or two, the students could type in anything they wanted to with no regard for errors—just generating a screen or two full of text to work on later with the program. At that point we didn't worry about printing anything out, just saving what they'd typed.*

*Once they had text to work with, then we worked with cursor movement, the idea that the cursor is where the work will happen. Then we moved into additional commands and how to use the package to come up with a good product.*

*It doesn't take too long, using a logical sequence. (I'd caution against following the manual's sequence—it presents many things that one doesn't need to know, or presents things too soon.) A couple of sharp, motivated, high school students could be put through the whole package (with the exception of three or four of the most sophisticated commands) in two weeks of 30 minute periods.*

Assuming that a student has never used a computer before, the following suggested sequence should provide an instructor a guideline to doing "first things first" in leading the student toward independence in using the AppleWriter IIe word processing program. The wording of these steps assumes that the instructor has taken the necessary time to become familiar with the program before teaching it.

1. The student is introduced to the computer and its own parts, including the power supply, the motherboard, and the input/output ports.
2. The peripherals are explained as to purpose; typically these will include the monitor, disk drives, and printer.
3. The floppy disk and its care are discussed.
4. The importance and use of write protect tabs is covered; protection of the master program disk must be strongly emphasized.
5. The process of installing a disk (AppleWriter IIe) in a disk drive is presented.
6. The correct method of turning on the computer and the monitor is covered.
7. Finding the workspace screen of the AppleWriter IIe program is explained; the correct workspace screen is identified.
8. Even this early, proper procedures for turning off the equipment should be carefully reviewed.
9. The student is shown the keyboard in detail with attention given to special keys; the student is encouraged to try it.
10. At this point, disregarding errors, a full screen or more should be typed by the student; this material will be used initially to learn cursor commands. Later it can be used as a base for trying editing commands.
11. Then, cursor movement can be shown, starting with CONTROL B and CONTROL E.
12. The use of the ARROW KEYS individually to achieve cursor control in four directions is logically next.
13. Use of the SOLID APPLE in addition to the ARROW KEYS should follow to demonstrate cursor movements of greater degree.
14. Only after general cursor movement has been shown is the DELETE key explained.

15. CONTROL F should be introduced and its various functions clarified individually.
16. The way to type in additional text at any desired location is shown.
17. The CONTROL R function of typing over existing text can be mentioned (and discouraged) here. (Inefficient and confusing, better warp and eliminate material.)
18. Upper and lower case change using CONTROL C can be introduced; the shortcomings of this procedure should be identified.
19. Obtaining the DOS Command Menu with CONTROL O must be explained; that this function does not change text should be affirmed to the student.
20. Commanding the disk drives by S6,D2 must be understood; when a student shows understanding of this command, the shortened version, omitting the S6 can be allowed.
21. Calling the catalog of a disk by number should be mastered.
22. The purpose and steps of initializing a diskette for filing records or written texts is discussed.
23. Initializing a blank diskette for filing records is done by the student at this point.
24. Using the records disk, the method of saving a program using CONTROL S and a filename is presented and practiced with the text previously typed into memory.
25. Loading a program using CONTROL L and the filename should be the next instruction.
26. The DOS commands RENAME, VERIFY, LOCK, UNLOCK, and DELETE should be discussed.
27. After confirming that the text has been saved, CONTROL N should be carefully explained and tested. (The file can be recalled using CONTROL L and the filename.)
28. Removing and replacing letters with OPEN APPLE and LEFT ARROW keys should be done.
29. Replacing the letters at another location by moving the cursor should be shown.
30. The 128-letter limitation of the previous step should be mentioned.
31. Explanation of the data line and the information it typically displays is useful at this point.
32. That the ESC key will alternately show the tab display, the data line, or neither should be verified.
33. The use and function of the data line DIRECTION ARROW should be identified.
34. The CONTROL D function should be detailed.
35. Sufficient text should be entered to have several "paragraphs" on screen.
36. Relating the data line DIRECTION ARROW to the following functions of removal and replacement is explained.
37. Removing and replacing words with CONTROL W is presented.
38. Removing and replacing paragraphs with CONTROL X is presented.
39. Using CONTROL W and SOLID APPLE, copying words and placing them elsewhere is illustrated.
40. Using CONTROL X and SOLID APPLE, copying paragraphs for placement elsewhere is covered.
41. Since the preceding CONTROL W and CONTROL X functions are limited to a combination of 1024 characters and spaces, the procedure for removing, removing and replacing, or copying larger passages ought to be addressed.
42. The utility of the "Help" screen can be suggested; use of OPEN APPLE can be explained.
43. Commanding the printer through the Apple Writer IIe program should be explained.
44. The sequence of CONTROL P, ?, RETURN should be illustrated and practiced.
45. The Print/program Commands screen should be examined and discussed.
46. The printer should be examined, explained, and turned on at this point.
47. The sequence CONTROL P, NP to activate the printer should be shown.
48. In turn, each of the following commands on the Print/program screen should be tried:
  - a. Margins, left, right and paragraphs should be employed one at a time.
  - b. The printed line command should be tried for effect.
  - c. The line interval should be tried for double and triple spacing of printed text.
  - d. The difference between PD1 and PD0 should be discovered and tried.
  - e. The print modes LJ, RJ, CJ, FJ should each be used for effect.
  - f. It is best to hold the other Print/program commands for later study.
49. The use and reasons for CONTROL Z can be mentioned, but discouraged for word processing.
50. The following advanced functions of the Apple Writer IIe program can be introduced:
  - a. CONTROL Q is introduced as a guide to its own special functions.
  - b. Use of the carriage return toggle to display the carriage return symbol should be strongly advised.
  - c. Use of the underlining token should be presented and practiced.

d. Additional Print/program commands can be studied:

1. The purpose and use of the top and bottom line margins can be discussed.
2. Pagination can be practiced; using the manual here is advised.
3. The advantages of not changing PI, TM, BM, CR, and UT values can be explained.
4. Experimentation with the use of TL and BL commands and the required delimiter should occur.
5. Emphasis can be placed of the top, center, and right placement of the last item.
6. Starting and stopping the printer within the text should be included.
7. Printing only selected portions of a text should be included at this point.
8. Connecting the printer to the keyboard should be demonstrated too.

e. Standard tabbing procedures, setting new tabs, and saving and retrieving them may be done.

f. Saving customized Print/program values and retrieving them can be introduced.

g. The CONTROL G glossary functions can be explored.

h. Building, saving, and loading a glossary should be for advanced students.

51. For the most advanced students, four additional features may be presented:

a. The CONTROL Y split screen display can be suggested for special uses.

b. Embedding print commands in the text for controlling the printer is a valuable tool.

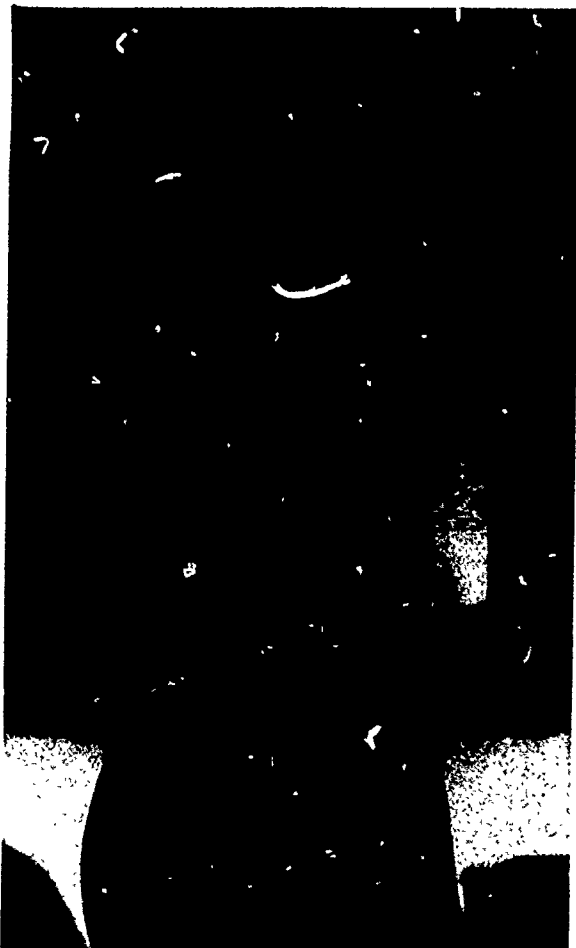
c. One difficult task, embedding control characters in the text, is also the most versatile.

d. The most difficult of all is mastering the WORD PROCESSING LANGUAGE commands.

## FROM THE CLASSROOM

### Alma Harris

Alma Harris is from Washington State, but has lived and taught in Alaska for the last eleven years. At Juneau-Douglas High School she teaches a full schedule of seniors including the Advanced Placement and college-bound courses. She is currently involved in the design and implementation of a two year Advanced Placement program at the high school, and has attended several Alaska State Writing Consortium workshops. Although Alma collects antiques, and, as she says, DOES NOT TYPE, she does plan to buy a computer, a direct result of her computer adventures with her students.



### WRITING SKILLS/WORD PROCESSING ACTIVITY: ESSAY WRITING

**Objective:** To use the Apple IIe and word processor in the process of writing a literary analysis essay.

**Teacher:** Alma Harris

**School:** Juneau-Douglas High

**Grade:** 12

**Number of Students:** 22

**Subject:** Language Arts

**Length of Activity:** 3-4 weeks

**Computer Access:** 7-computer lab (Apple IIe)

**Word Processor:** AppleWriter

**Writing Process Emphasis:**

- ☐ Fluency
- ☐ Drafting
- ☐ Responding
- ☐ Revising
- ☐ Editing
- ☐ Publishing
- ☒ Entire Process

### Word Processing Training Procedure:

Two of my students attended the Saturday student assistant training session. Those students, plus others in my class who have computers at home, helped the beginning students who were interested in word processing. I did not train my students. (Most of my students could train me!) We went to the lab and those who were interested used the processors and asked me or other students for help. This casual use of the computers worked very well with my students. There were no fears, but much gain!

### Writing Assignment Procedure:

**NOVEL:** *Giants in the Earth*

Students were assigned the novel and given a reading schedule and assignment: To write a literary analysis essay.

1. **PREWRITING** (warm-up, idea generation, invention) **ACTIVITIES:** to "prime the pump" for writing the essay included:

a. Reading the novel. (Obviously!)

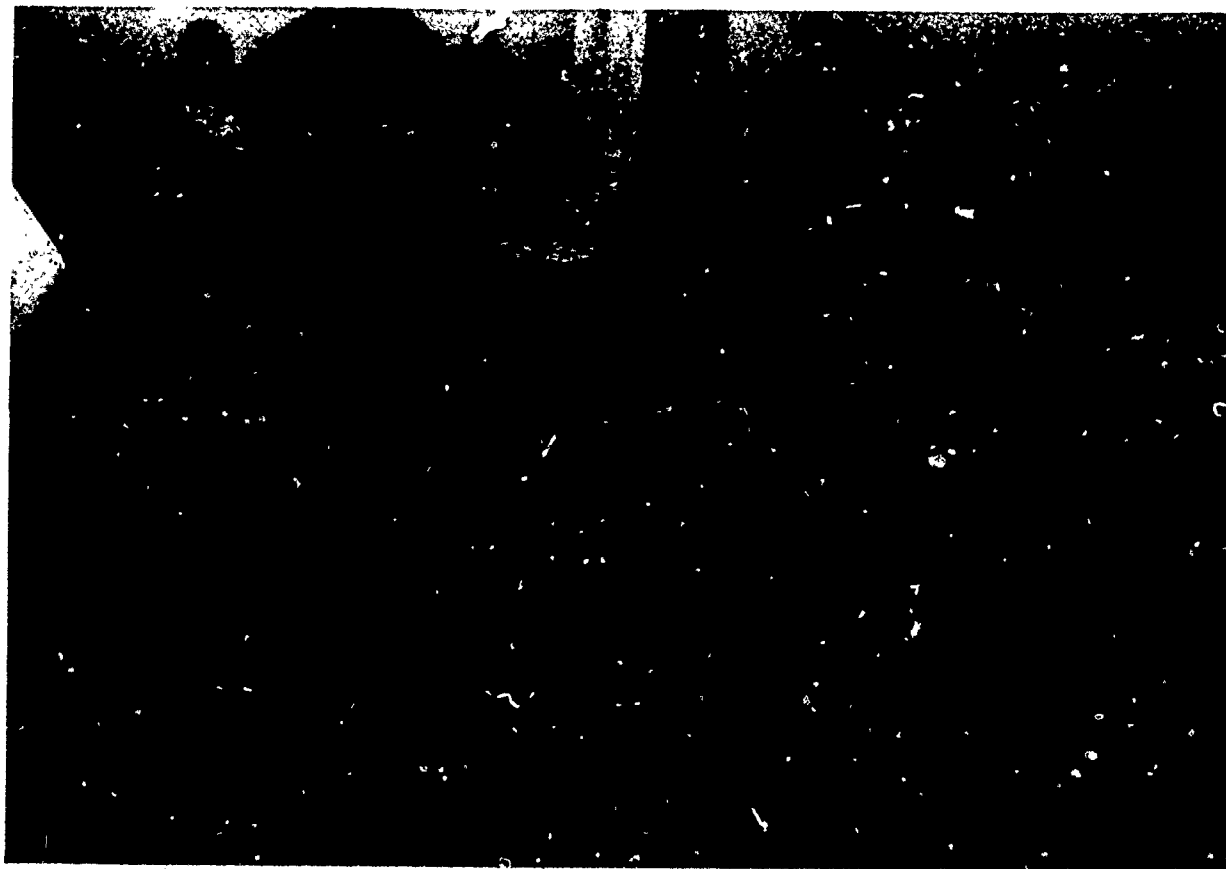
b. **Response log:** At the beginning of each class period students wrote a response to the previous night's reading. Response logs were not checked for mechanical correctness; they were to be "fast-writes," or "free-writes," "thinking out loud on paper," a place to sort out what the student thought and knew about the topic and/or reading. Response logs involved such questions as:

- Based on the first 35 pages, what do you predict will happen in *Giants in the Earth*?
- What is the difference in the reactions of Beret and Per Hansa to the Spring Creek Settlement?



- c. **"Showing" writing:** After the students had read about a third of the novel, I asked them to do a "showing" writing (that is, "showing" vividly with details and support, rather than "telling" more generally) to test their understanding of the difference between the main characters. Example:
    - Rolvaag does not describe Beret or Per Hansa's reaction to the first time that they see the Spring Creek Settlement. Describe the thoughts and reactions of each character. Use the same point of view as Rolvaag.
  - d. **Class discussions:** These began with the response logs, and expanded to basic themes, allusions, symbols, and images in the novel.
  - e. **Objective test:** When the book was read, the students took a test which tested their understanding of basic plot, characters, etc.
2. **DRAFTING THE ESSAY:** the heart of the matter! This involved selecting a topic, drafting a rough thesis/topic outline, sharing it with a student response group, and me. An introductory paragraph was drafted, and/or a more detailed outline, and this also received peer and teacher response. (At this point, some of the students were composing on the computer.) First complete drafts were taken to response groups.
3. **REVISION:** drafting and revising necessarily overlapped. Some students wrote up to three drafts. Some revised on the computer. Those students who were using the Apple IIe were divided on the value of the monitor for revising. Some felt revisions were easier on the screen, some needed a printed page to work on. Some students put their handwritten rough drafts onto a disk and then revised on the printed copies.
  4. **EDITING/PUBLISHING:** those who used the computer chiefly for printing a final copy concluded that the word processor is definitely easier than pen or typewriter.
  5. **EVALUATION:** points were given for all stages of the process of developing the essay to final draft: all early drafts, notes, outlines, thesis paragraph, etc., etc., as well as grading the final copy.

Robin Gray helps Marla Wilson (Photo by student Hank Lentfer.)



# Me? Computers? Impossible!

By Alma Harris

In the fall of 1983, I was invited to participate in a district-wide workshop given by the Alaska State Writing Consortium. The three days were very rewarding. My reactions ranged from "That's what I needed and wanted to learn after my first year teaching!" to "Oh, that's why it works to give my students credit for outlines and rough drafts!" A number of the strategies I learned at the workshop worked well when I took them back to the classroom.

Therefore I readily signed up for another ASWC workshop when it was offered in March of 1984. I paid scant attention to the mention of computers and word processors. The workshop presenter offered more great ideas for pre-writing, writing and revision. But somehow the workshop also involved the participants in some experimental project with the Apple IIe computer. Me? Computers? Impossible. The only machine which ever proved my friend was my mother's old Singer treadle sewing machine. After ten years, I still turn on the wrong burner on my stove. I don't pump gas. I DON'T TYPE.

Nonetheless, early in May, after several computer workshops an Apple IIe found a temporary summer home on my 1950's desk in my 1904 home. (The computer would not fit on my 1910 rolltop desk where I originally hoped to give the Apple a home.) The computer actually worked after I set it up! The Apple IIe rabbit maze was great! But in July, after my husband and I returned home from our trip to the lower 48, I again sat down in front of my computer. I discovered I had forgotten a few basics. Which came first? The "on" button? The disk in the disk drive? But through trial and error, I managed the AppleWriter software, and I was soon writing practice letters and quizzes on the computer. But I was afraid to hook up the printer. (I had only seen it done once.) So I did not learn what all my great writings illuminated on the monitor looked like in print. Would I ever be able to figure out how to print?

Such was the experience of a teacher who was to use the Apple IIe in the classroom as a part of a project to describe to other teachers how to use computers in the writing process. I was too dumb to be frightened. I concentrated on the principles I had learned in the Alaska State Writing Consortium workshops and ignored the real issue.

And then in the September 13th workshop (it wasn't a Friday), all of the teachers involved in the Project spent a day together. *We were scared to death.* I began writing in my project log. I asked such questions as, "When am I going to get over my fear of the computer and consider it a challenge?"

But the next day I was able to escape back into the classroom, literature, and writing with a pen. Unfortunately, in a little more than a month, another computer project deadline forced me to really take action. In October, two of my students were trained as student computer assistants. I attended the same training. The rest of my college-bound seniors were at the stage to write an essay on *Giants in the Earth*. My first two classes of the day were small enough that we could make good use of the seven computers in the lab. I did not presume to teach my students how to use the computer.

In my first period class, only three of my ten students used the word processor to write the drafts of their essays, but those three had a great time. On the first day in the lab, we had a local university (UAF) student observer, and even she was trained by one of my student computer assistants. The UAF student was thrilled with the computer and she took home a copy of the short guide to AppleWriter. My students were doing great things without my teaching! They taught each other! All I did was open the lab and distribute the disks.

Second period was even more exciting. All twelve of the students entered the lab and sat down at a computer. Robin taught Andrew. Gail helped Yvonne. At three of the computers, two pairs and a trio worked together. I was even able to answer a couple questions. I did not have to be an expert to incorporate the computers into the writing program. Seniors have been exposed to the world of computers and can help one another and a fearful teacher. Half of my students have taken a computer course at the high school. Seven of my twenty-five students have computers and word processors available to them at home or at an employer's office.

A portion of my students continue to use the computers each time there is a paper due. I just let them use the lab. They process their papers and help each other. We have just begun our research

project, and a number of students have warned me they'd better get to use the computers for the drafts of their research papers. I'm looking forward to having a computer or two in my classroom next year.

Computers can be used successfully in the classroom even when the teacher is not an expert or even an experienced apprentice. The students love teaching the teacher, and especially love teaching one another.

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**Results from a national survey (2,209 schools) on school uses of microcomputers, conducted by the John Hopkins University Center for Social Organization of Schools:**

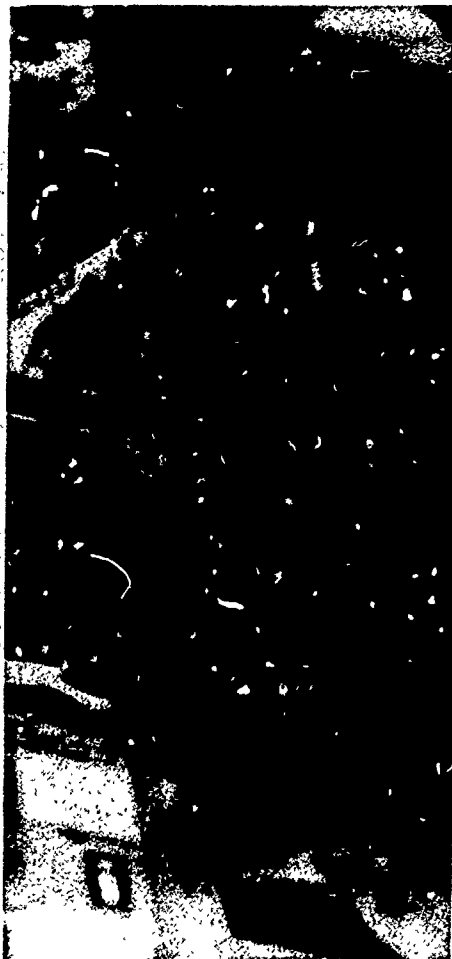
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*Teachers say the greatest impact of microcomputers has been social: For the most part, microcomputer-using teachers find that the effects of microcomputers have been more on the social organization of learning than on increased student achievement, per se. Substantial numbers of microcomputer-using-teachers believe that micros have led to increased student enthusiasm for schooling; to students working more independently, without assistance from teachers; to students helping one another and answering each other's questions; and to students being assigned to do work more appropriate to their achievement level.*

**Issue 1: April 1983**

*To use computers effectively, in traditional classroom instructional settings: teachers must organize classrooms with simultaneous multiple centers of attention. They must engage students who are waiting for their turn at the computer in profitable—not merely time-consuming—activities.*

**Issue 6: November 1984**



## CHAPTER FIVE:

### Life in the "Revolutionized" Classroom: De-Centering

*I am, admittedly, overwhelmed with the idea of a computer in my classroom because I am used to teaching everyone at the same time with the whole class on the same activity. Yikes! What if chaos breaks out?*

Luann McVey  
project journal

*The kids need to associate being on the computer with organization, not goof-off time.*

Harris Thomas  
final interview

*Funny, it's the little things that are scaring me. How the kids will share the disks, how to make sure nobody breaks anything, how to organize the groups for using the computers—how to keep track of it all.*

Carolyn Swanson  
project journal



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# How Will the Microcomputer and the Process Approach to Writing Instruction Affect What Goes on in My Classroom?

## No More Empty Buckets

By and large, elementary teachers and teachers of rural, multi-graded (K-12) classrooms like those in much of bush Alaska are more experienced at having a variety of activities taking place simultaneously in the classroom, than are most secondary teachers in larger schools where classes are segregated by content. Elementary and/or small school teachers are learning *managers*, as much or more than Sources of Knowledge. Group work and student interaction is frequent, an integral part of the classroom climate, the lubrication and the context for learning. By talking, sharing, and writing together students often have an active role in the discovery and formulation of their own knowledge.

In contrast, many secondary classrooms are more content and/or product-focused and teacher-centered. Physically, the room arrangement often reflects this: desks are in even rows, facing toward a lectern or the teacher's desk. Except for a science lab, there are rarely tables, circles of seats, corners with shelves and chairs, partitioned spaces. Sometimes of course, secondary teachers have to share classrooms, and don't feel they have the latitude to change furniture around. But, it's interesting to note that in a typical secondary classroom, the standard arrangement is almost always *presumed* to be: rows of desks facing a lectern.

This physical set-up can reflect an often unconscious assumption on the part of secondary specialist teachers who strongly identify with the *content* of what they teach: namely, that they are the guardians of a body of knowledge that they must transmit to the students as efficiently as possible. At its logical extreme, this could best be described as the empty-bucket theory of teaching and learning: we have the knowledge and we have to pour it into the students' "empty buckets" so they "have" it. The way we can then know that they have it is to see if they can regurgitate the knowledge on command.

If you're an "empty bucket," then your mode is chiefly receptive: your job is to listen, to read, to receive the knowledge that's being given to you, and to prove it's "in there" by answering the questions at the end of the chapter, the teacher's questions on the test, etc. You are mainly reading,

listening, and note-taking. Class discussions are conducted by the teacher, who does most of the talking, and answers a lot of his/her own questions.

Again, this is the logical extreme, but the point is, as a teacher in a specialized content area, it's very easy and certainly reasonable to view one's task as primarily pouring pre-packaged knowledge (usually in discrete, sequenced bits) of one's content area "into" the students. That's what one is there to do. And, it also seems the most efficient way to do that pouring/siphoning is to have everyone in the room doing the same thing at the same time, with the teacher leading the action.

Teachers vary, of course, in the degree to which they consciously or unconsciously subscribe to these assumptions, but it's probably safe to say that there are more secondary classrooms that operate on the empty-bucket theory than not. So, when the process approach *and* the microcomputer arrive in the classroom at roughly the same time, there might be more than a few revolutionary ripples moving across the classroom pond—for some teachers, there might be a series of tidal waves.

When there are one or two computers at the back of a normally full classroom with four students clustered together, teaching each other how to use them; or when students are writing on meaningful topics for real audiences, and sharing their rough drafts with other students in response groups—clearly, we have to acknowledge that "empty buckets" aren't exactly what we're dealing with here.

Students come to the classroom with a great deal of knowledge about themselves and their worlds. The question is, how can we create a classroom environment in which students are not perceived as "empty," passive receivers and listeners most of the time? That is, how can we use *the knowledge students already possess*, to help them connect to the new knowledge we wish them to have?

As both ample research, and rich collective teacher intuition and experience have shown, when students are provided with opportunities to *re-formulate new information in their own language*—by talking and writing-to-think, by interaction with peers, by actively making meaning for themselves,

by being full participants in their own learning—their learning is much deeper, more meaningful, and, is therefore retained much longer, than when they are passively receiving, and dutifully regurgitating.

Providing such opportunities for active learning clearly will mean evolving strategies of group work, managing activities not directly under teacher control, and de-centering the classroom at least once in a while in order to give students access to their own knowledge by talking, sharing, comparing. The interaction (with the self and others) that is writing and talking forces students to find their own words to represent what they are learning. In order to do that, they have to interpret, investigate, synthesize—actively connect their prior knowledge to the new knowledge of the content area. Making such connections is what “coming to know” is all about. Making connections is finding meaning. Making connections is learning.

For the teachers in this project, the presence of microcomputers in the classroom (as well as in the small lab) along with process-oriented activities in writing invited active learning, and necessitated new or alternative methods of classroom management. De-centering the classroom seemed to trigger interesting shifts in roles, and group dynamics. The “revolutionized” classroom was sometimes unsettling, sometimes frustrating, but ultimately a very rewarding place to be.

## Managing and Scheduling

The easiest way to include word processing (using one or two computers in the classroom) with the least amount of uproar and turmoil—and de-centering!—seemed to be to simply make the computer station like another desk in the room. Nancy Thomas used this approach. Each day, a different student sat at the computer, and used it to do whatever work was required for the class that day. A partner could help, and often did, but essentially it was that child’s “day.”

The writing activity demanded lots of pairing and sharing of drafts, and that happened at the computer, too. Nancy’s goal was “for everyone not just to be able to use the computer, but to produce something, to print out something they had written.” It took about nine weeks to get around the whole room.

Another way to minimize upheaval in the integration of word processing is for the teachers to use familiar writing activities so that not everything is new. Several of the teachers who conducted

writing activities deliberately used tried and true assignments. Essay writing would have happened in Alma’s class whether computers had been handy or not; sentence combining and letter writing units were well-known to Linda and Carolyn.

Harris Thomas and Tom Drazdowski—who also integrated the computers into what they were already doing—rotated assigned pairs of students on the four computers in their double classroom for about 15 minutes per pair. Each pair had the assigned work of literary response logs or pen pal letters to do. Other students worked on different assignments at the same time. Things were tightly structured, and scheduled, so everybody knew what they were supposed to be working on yet there was individual choice within that structure. “They had three different responsibilities that had to be met by a deadline in the near future, as opposed to the end of the period,” explained Harris.

Tom reflected that although they kept it as structured as they could, for most of the students this “was probably the most unstructured thing they’d done all year. In other classes, it’s like: this is math or whatever and this is what you do, and this is where you sit, and you don’t even breathe crooked. Then they come in here and say “Hey, I can move and walk to the back of the room, and I have three different things I can work on.”

Didi Ryall had enough computers for almost all of her special ed students if they paired up in the larger classes. Sharing and interaction was going on quite spontaneously as part of the writing processes of the students, as well because of the use of the computers. She and her students were able to create a genuine workshop atmosphere in her classroom.

Luann McVey divided her biology class into small groups for the writing project, and rotated the groups onto the computer which was in a somewhat—but not entirely—separate work space, just off the classroom. For a week, the small groups worked simultaneously on their tasks, taking turns at the computer. After that, Luann continued with large group teacher presentations, with the project groups operating as a kind of “pull-out” program. There was a collective concern about making sure the students on the computer “got the class notes.”

“I am more of a whole class teacher,” said Luann, “and having different things going on was hard for me, especially at first.” She understandably found it difficult to conduct whole group discussions when a small group was at the computer. The teacher-led whole group activity and the active

learning interaction at the computer did not blend readily. Alternating approaches might be more effective.

All of the teachers with computers in the classrooms mentioned that for the first day or two, the computer was a distraction. "Heads turned all the time at first," said Nancy, and, impatient for their turn, some students were initially constant clock watchers. But very quickly, the computer became just part of the flow and no longer drew any special attention.

Carolynn Swanson and Linda Bischoff both used the small lab in the library, rotating large groups of seven or eight students into the lab while the other students worked in the library. For both teachers, this ended up being a frustrating management experience, despite the success of the computer/writing activities going on in the lab.

Linda explained, "There were no problems in the lab, but lots of problems in the larger library outside. I had to keep jumping in and out of the lab to keep them quiet, or deal with the unsupervised kids from other classes who were entertaining them! Finally we decided to take our individual computers back to the classroom. I never thought I'd say that—I thought a small lab would be it, but no. You have to deal with the kids in the other area. We needed to have the computers and the kids in one environment. Two different spaces didn't work for me." De-centered activities still need in-view supervision, for some classes.

In the lab, with smaller classes, Alma enjoyed watching spontaneous writing groups form around one student's work at the computer, with responding and revising happening right at the screen. "Ideally," she said, "I'd like to have five or so computers right in the classroom, since everyone is always at different stages in their writing all the time. That way, writing groups could be happening while others would be at the computer, revising or publishing." Such grouping would be a natural use of the computers in the writing process.

### Social Dynamics—The Classroom as a Community of Learners

As several of the teachers observed, a computer is "the great equalizer" in the classroom. Everybody learns, everybody can help somebody else, often the "slow" kids are the speediest with the machines. The writing process approach, too, is an equalizer of sorts: it can provide a workshop atmosphere where everyone is writing about things that matter to them, for each other and wider audiences;

where students with a variety of skill levels team up and help each other; where sharing and publishing build everyone's self-esteem; where the teacher is a writer, too.

Nancy: *Some of the relationships that came about because of that computer were incredible—it was a sort of computer friendship service! Some of the kids who were social outcasts—shy, non-athletic, etc., who didn't have a lot going for them, did know about computers. They had picked it up quickly or already knew, but they became the authorities, and were called on by the others. Because certain kids had computer knowledge, they had friends.*

Linda: *Computers didn't just touch the kids academically, but socially, too. What they did for the students as a group was remarkable. I had students who had never interacted before start little relationships, in the sharing, in the process of helping one another . . . and that has continued. It didn't stop when the computer project stopped. I'm really impressed with the power of the whole thing. We have to care about the student as a social person, too. We have to remember how much their emotional life and self-esteem affects what they can learn.*

Didi: *For the resource kids, it was a real high to be able to give advice on adventure games or something to the gifted kids . . . the computer really is the great equalizer—the gifted, the girls, the boys, can all do just as well. One of my students who had originally learned Homeword with me, all by himself moved to AppleWriter. He was king of his turf, so pleased and proud when he had to teach me, who knew nothing about AppleWriter at the time.*

*. . . it was interesting to see, too, a group feeling develop as the kids became more comfortable with writing, and with responding to each other's writing. They picked up on responding helpfully to each other's work so fast. We had a couple of rules about response: don't apologize for your rough draft, and no unkind remarks about somebody else's writing. One boy became an excellent questioner. "I didn't really understand that part," he'd say, "and I wanted to."*

*Always, traditionally, my kids would never read their writing. But now, by choosing their own topics, and feeling safe in sharing, there's an investment, a little piece of their soul in everything they write, no matter what it is. They feel comfortable revealing themselves. It's not always easy*

to do that—it shows their confidence in themselves and in their classmates.

Alma: Computers definitely affected relationships in the classrooms—it was very special to see very different kinds of kids sitting together at the computers, helping, teaching each other . . . The training session where I was learning along with the students was really good, too, because after that we all had a different relationship. In retrospect, that was actually more important than what we learned about computers.

As mentioned previously, a teacher who is almost as new to the technology as his/her students has the opportunity to model a positive attitude toward life-long learning, which is undoubtedly going to be a survival mode in the world of the future, if it isn't already.

As we move further and further into the Information Age, the question is not "Who discovered America?" but much more "How do we discover who discovered America? With the current and ever-expanding amount of information available to us, having all the answers, imparting all the knowledge, isn't even reasonable to expect of a teacher. What we must teach students, however, is the ability to access and use information for their own purposes. What we must foster is collaboration and cooperation, the ability to talk, listen actively, respond appropriately—to participate in healthy and meaningful ways.

### Developing Autonomous Learners: Encouraging Small Groups and Student Interaction

As we have seen, when the microcomputer and the writing process land in the teacher-centered secondary classroom pond, the classroom will de-center. It has to. If there are only one or two computers available for a whole class, the students will have to pair up, team up, share and learn from each other, while other things are going on in the classroom. And, likewise, if teachers believe that genuine response, real audiences, and purposeful writing are critical to the development of writing skills, then it's clear that students are going to have to talk about and share their writing with each other. How a teacher reacts to, copes with, or embraces all this unavoidable—but invaluable—de-centering depends upon his or her technology teaching/learning style, and implicit or explicit attitudes and beliefs about how students come to "know" content area knowledge.

As one way of managing the de-centered classroom, teachers turn to organizing small groups. But there's another way to think about that decision. Writing, and especially writing with computers, is empowering precisely because it's dynamic and encourages interactive learning. Students who are collaborating with each to solve problems, discover ideas, and use their imaginations are students who are using language to make their own meanings. They are actively participating in their own learning. They are *producers of knowledge*, not just passive consumers. In dealing with the demands of group involvement and active thought, *students become autonomous learners*.

So, *small group work needs to be included in secondary classrooms for its own sake, not simply as a management coping device*. As M. Abercrombie and P. Terry point out in their monograph, **Talking to Learn**, the relationships between students are usually ignored or viewed as being of "neutral or negligible value" in the education process. But, they must be "recognized and fostered as a powerful medium" for real learning. (1978, p.2)





In addition to its intrinsic educational value, then, writing (in a process-oriented classroom) with word processing can also serve as a powerful motivation and focus for group work. It can be the incentive for developing talk and interaction, an appealing reason for students to try solving problems that don't have pre-determined solutions. In the context of a process approach to writing, we have the opportunity to use the microcomputer in a profoundly educational way, and we should not ignore it. For, if we are preparing students for life in a world of on-going significant, social and technological changes, we must teach them how to learn, to cooperate, and to communicate.

One of the teachers in the project, Luann McVey, used small groups at first to simply manage the task of sharing the one computer available to her students, as they developed a handbook for using a microscope. But as the class evolved she began to see the other, significant advantages to group work. She began to see autonomous learning.

*Before this computer project, I hadn't used much group work in my classes. I was worried they would just fool around too much. But after seeing how groups worked in the computer project, I've used groups much more. It's been beneficial for both me and my students. I think it's very good to have them working with one another and not have me being the The Boss all the time.*

*It enabled me to roam around and listen in on their talk—I can hear what they're thinking, and if they're off track or they don't understand, I can be immediately helpful. And best of all, it gives their peers a chance to be helpful, too—steering each other in the right direction. If one kid has the wrong idea, another student might have a whole different way of explaining the concept that could make a difference—for both of them.*

*It works a lot better for learning, from my point of view, than if I'm just up front, doing all the talking and they're each working all alone, silently.*

*The kids felt that the group work was very worthwhile. Even coming from different points of view, they were able to compromise, and learn from each other.*

In group talk, and interactive writing, students reinterpret knowledge for themselves. In contrast, during extended silent listening, their participation is greatly restricted, and learning is considerably lessened. Writing is not just for recording and regurgitating facts, and proving mechanical competence. It is a process of coming to know what one knows. In the same way, talking is not just a system of communication, but a fundamental of active participation in the making of meaning. Talking and writing are critically important learning mediums in the classroom. Each can nurture and encourage the other, and the microcomputer and the writing process can foster both.



## FROM THE CLASSROOM

Tom Drazdowski and Harris Thomas

Tom Drazdowski (left), has been a high school teacher, the principal of a private high school, and for the last five years has taught at Floyd Dryden Middle School. With an M.S. in Reading, Tom is now the language arts and reading teacher of a seventh grade 4-teacher team.

Harris Thomas (right), with 12 years of teaching experience, has been at Floyd Dryden Middle School for the last ten years. A member of the same team as Tom, Harris is responsible for teaching reading and geography. This year, Harris (along with Tom) focused on developing computer skills useful for the classroom, including taking a graduate course in tool software.

Together, Tom and Harris have developed a unique interdisciplinary program, involving students in the intensive study of foreign countries. Students learn to problem-solve as they plan an imaginary three-year stay in their respective countries, bringing in aspects of math, science, geography, and language arts. Their use of the word processor for literary response logs was an excellent way to tie together reading, writing, and publishing, continuing their cross-curricular theme.

For their second Writing Skills/Computer activity, they incorporated the pen-pal letter strand described here, and look forward to designing an electronic almanac to catalogue more of the information the students are receiving from their pen pals. Note their use of the word processor as a tool for brainstorming ideas for writing, prior to the actual drafting of letters.

Both projects make much use of partners and groups for writing response, providing that crucial sense of audience that makes writing and revision meaningful. These successful activities reflect significant collaboration on many levels: between Tom and Harris, between writing partners, within groups, and globally—among countries!



### WRITING SKILLS/WORD PROCESSING ACTIVITY:

#### LITERARY JOURNALS

**Objective:** To integrate computer use into our reading classes so as to give students the opportunity to use computer technology to assist in the writing of literary journals. The same students are in our regular classes (English and Geography) and we wanted to train them to be our core group of "computer experts" when we got to the pen-pal section of the project.

**Teachers:** Tom Drazdowski & Harris Thomas

**School:** Floyd Dryden Middle School

**Grade:** 7th

**Number of Students:** 40

**Subject:** Reading

**Length of Activity:** 5 school weeks for initial computer training and completion of first novel. (Will continue for entire year.)

**Computer Access:** 4 Apple IIe's with dual disk drives, 2 printers between the two classrooms.

**Word Processor:** Zardax

**Writing Process Emphasis:**

- ☐ Fluency
- ☐ Drafting
- ☐ Responding
- ☐ Revising
- ☐ Editing
- ☐ Publishing
- ☒ Entire Process

#### Word Processing Training Procedure:

Through whole class instruction (lecture and demonstration) we made students computer literate in the areas of basic hardware and software use. Each student went through the Apple tutorial program (Apple presents Apple) to familiarize themselves with the specifics of the Apple IIe.

After the tutorial was completed, we each took a group of twenty students back to the computers and demonstrated basic word processing skills using the Zardax program, such as creating, naming, saving, and retrieving a document. After making initial entries we showed them how to revise and print a document. (See *Welcome to Zardax*, page 84.)

#### Writing Assignment Procedure:

Students were already familiar with the literary journal (see next page for a definition) because we had used it while reading *Treasure Island* at the beginning of the first quarter. Students were to write out responses to each chapter in rough draft form on paper first, then use their computer time to log their entries, doing any revising or editing deemed necessary at the time.



Students were divided into 20 two person teams who shared 25 minutes of computer time approximately every third day. Lack of keyboarding skills made initial entries long on time but short on content. But speed and accuracy increased as confidence grew. The length of entries also seemed to increase each time, especially after they examined a hard copy of their first entries and saw how little space it occupied on the printed page. In most cases we went from a sentence or two to entire paragraphs or more, with each student always trying to better his/her last effort.

We alternated having students read their own writing to their partners who typed it in, then switched the procedure to find which technique worked best with each

team. We chose the novel **Through a Brief Darkness** by Richard Peck because it was of high interest and basically easy reading, especially after the difficulty of language encountered in **Treasure Island**.

Once a week we would chain all the entries from all four disks together and print a hard copy of the class effort as of that time, then post these by the computers so that all the students could review and share each others work.

**Evaluation Process:** Students were evaluated by how well they used their computer time, and to what degree they met the requirements set forth for the literary journal.



# Literary Journals: A Rationale

Literary journals (or literary response logs as they are sometimes called) are a place for students to write-to-think about a book they are reading. The focus is not on mechanical correctness, but on using writing as a way of discovering what one thinks, and knows, and wonders. This kind of writing invites students to make sense of new information, to grapple with new ideas.

Therefore students are encouraged NOT to summarize plot or characters or whatever (as in the standard "book report"), but rather to question, to theorize, to connect with their own experience, to **respond**, emotionally and intellectually as they read. Ideally the writing should happen every few pages, a kind of on-going "dialogue" with the reading, the author, and one's own thoughts.

This kind of "expressive writing" (described by British researcher James Britton as the language closest to speech, written primarily for the self) often becomes a rich storehouse of ideas, and can provide seeds for more polished, formal writing later. For some purposes, as in Harris and Tom's project, an audience can be built into the process, but then time should be provided for drafting and revision (as was done in their classroom). Initially, however, to make the most of this writing technique—a useful one in any content area—the focus should be on thinking, reacting, and responding to the reading, and "getting the self said" rather than shaping coherence for an audience. When students begin to trust that their genuine responses are really what is important, the writing often becomes lively, voiced, fresh, and insightful. They become active producers of knowledge, rather than just passive consumers. —GP.

**Sentence Lead-ins** (or tional ways for students to get started in this kind of think-writing):

I'm confused about . . .

I'm wondering about . . .

I'm really enjoying . . .

This reminds me of . . .

This character is just like . . .

The writing in this part makes me feel . . .

Why . . . How . . . When?

I predict that . . .

This is a new idea to me . . .

In my life . . .

I'd like to know more about . . .

## Samples of 7th grade literary journal responses from Harris' and Tom's classroom:

(Note the questioning, puzzling, hypothesizing, as they develop and define their own taste!)

*Why are people making fun of Karen's father? Why didn't she enroll in a private school again? Why did Karen's father go away at Christmas? I would like to know more about where her father moved. I like the way Karen got thrown out of the private school. I also don't understand why her father didn't want her to be in a public school.*

*At least the lady could have let them stay a little longer. She also didn't have to be so mean. But then when I read a little more I found out that she really isn't that mean. If I was as lucky as Karen, I would be a lucky person. Going to Paris for free sounds good to me.*

*If the author wanted to, he could have ended the story by having the plane blow up. I wonder what the man in the trench coat wanted. I think that the man was someone who works for her father or someone that was cheated by him. I would not mind sliding down the slide on the airplane. I would have told them about the man in the trench coat.*

*I would not have been able to fall asleep in London. This story is no longer interesting, of course that is only my opinion.*

*This book is already better than **Treasure Island**.*

*Well, this chapter is picking up pace, and is going places. I'm really wondering what kind of job her father has because he seems to always be in big trouble or safe. She probably thinks something big and awful has happened to be sent out of the country. Especially when that woman said that the note was written in haste. Karen must always feel insecure because she hardly ever seems to stay in one place very long and wonders what and where is next. She must be kinda scared.*

## FROM THE CLASSROOM

### WRITING SKILLS/WORD PROCESSING ACTIVITY:

#### PEN PALS, ELECTRONIC ALMANAC

**Objective:** To use the word processor for: writing pen-pal letters; a tool for brainstorming ("Prewriting"), and as a motivator in the making of an electronic almanac containing the information learned about various countries via pen-pal letters.

**Teachers:** Tom Drazdowski & Harris Thomas

**School:** Floyd Dryden Middle School

**Grade:** 7th

**Number of Students:** 90

**Subject:** Geography/English

**Computer Access:** 4 Apple IIe's with duo disk drives, 2 printers between the two classrooms.

**Word Processor:** Zardax

**Writing Process Emphasis:**

- ☐ Fluency
- ☐ Drafting
- ☐ Responding
- ☐ Revising
- ☐ Editing
- ☐ Publishing
- ☒ Entire Process



### Writing Assignment Procedure:

After selecting countries to write to, students composed a letter expressing the wish to become a pen-pal and requested help in obtaining information for a geography project. The main points to be covered in the letter were discussed in a brainstorming session in class. The students used paper and pencil to compose their rough draft.

Students were divided into computer/response groups of four or five. Every member was responsible to cover for each other in terms of what was happening in class while another was on the computer. Computer time was divided into blocks of 20 minutes. Two were on a computer at once so that there was additional help available for proofreading and general response. In addition, any response to drafts, finals, or brainstorming was done in these groups. The teachers seeded each group with a number of students that had gone through the reading journals/word processing unit.

After receiving responses from around the world, it was time to tell the penpals something about Alaska. Another brainstorming session was called to decide what information we wanted to share about Alaska and learn about other countries. After going from self to group to class brainstorming, the teacher asked for questions to have answered about Alaska and/or Juneau. Questions were entered onto the computer and printed. These were then copied, and given to students the same period to start research. The computer made it possible to edit questions and enhance the positive flow as opposed to "Wait until tomorrow so that I can type this and run it off . . ." Answers were entered as the information was obtained, and an updated sheet was given to each student.

Students then used the questions and answers to generate a second letter to their pen-pal, being more specific and informative about Alaska. After rough drafts were typed into the computer and printed, response groups looked over the letters and offered suggestions. Students then re-edited their letters on the computer and printed them out for mailing.

Toward the end of the year we will form an electronic almanac where students will enter the information learned about their country by category. This will then become a resource for other students to use for finding out information not generally available in other resources.

**Evaluation process:** Letters that went out were either an "A" or a "re-do." Peer pressure usually resulted in having those students with short letters adding to them so that they were longer and more informative.

**Excerpts from Brainstorming Sheet:**  
Questions and Answers compiled on computer  
prior to drafting personal penpal letters

**Period One**

- How much ice cream does each person eat? Kelly W. —Chocolate most popular.
- How expensive is it to buy a 2 bedroom house? Tania —about \$112,000
- How many square miles in Juneau?
- How much snow fall is there?
- Do you have school dances? Esther —yes
- What are the houses made of? Leah —Bricks or wood; roofs of wood shingles or metal.
- How many sunny days in a year? Jeni K. —In the months of May and June we get an average of 2 to 3 days a week. In Sept. one or two days a week.
- What does the flag look like? Norma —Dark blue color with Big Dipper on it.
- What is the population of Juneau? Naomi —about 25,000 now, 18,000 five years ago, 12,000 ten years ago.

**Period Two**

- Do you have a McDonald's? How much is a "Big Mac" Kelly —Yes, \$1.75.
- Does Alaska have the biggest bears? Scott M. — Yes, the Kodiak brown bear.
- How much milder is Juneau than other parts of Alaska?
- How many kinds of natives in Alaska? Todd — Nine types.
- What is the glacier like? Renee W. —A glacier is mostly frozen ice. In the winter it might have snow on top of it. It is mostly a frozen river. It is able to move forward and backwards, forward when more ice comes and backwards when it melts.
- Do you have to wear uniforms in school? Brett — No, our school is a public school so we can wear anything we want.
- How much of your state is covered by water?
- How many bedrooms does your house have? Chris H. —Three
- Where do you go for fun? Renee R. —Swim at pool, ski at resort, go to the movies, go to sport games, raquetclub, sledding in winter, school dances, sports, clubs.
- What are the climates there? Charity —Marine climate.
- How many schools are there in your city? Tyra S. —Nine public schools.

**Student Letter: Note incorporation of  
"brainstorming" session questions and answers.**

**Examples of data base which organizes information  
received from penpals**

**Country:** Bahamas  
**Contact Person:** —  
**Year Established:** 1984  
**School Name:** Kingsway Academy  
**Student Name:** Melanie Bethel  
**1st Line Address:** Kingsway Academy  
**2nd Line Address:** Box N-1087  
**3rd Line Address:** Nassau, Bahamas  
**4th Line Address:** —  
**5th Line Address:** —  
**Rating Materials:** 2 pamphlets, stamps  
**Option A:** —  
**Option B:** —  
**Option C:** —  
**Option D:** —

Dear Penpal,

Juneau's population is about 25,000 people and 5 years ago it was 18,000 people and 10 years ago it was 12,000 people. About 2 years ago people in different states in the U.S. started to move to Alaska because there were no jobs in their states. In the summer tourism plays a big part to the economy in Juneau. To give you a good description of Juneau is hard but I'll try my best. Juneau is located next to the Pacific Ocean. Alaska has 6,640 miles of coastland. Juneau is isolated so the only way out is by plane and ferry. Juneau is practically all mountains that are big and tall and some have snow on the peaks all-year-round. Juneau has a big glacial ice field behind it. The glaciers we can see are MENDENHALL GLACIER (the one people can visit) HERBERT, LEMON CREEK, and EAGLE GLACIER. Juneau has a lot of wildlife such as bears (Alaska has the biggest bear the Kodiak bear)

Juneau and Douglas are connected by a bridge. The weather in the summer in Juneau is rain to sunshine. This summer we had mostly rain. The winters are snow to rain. So far we have had 6 inches. The average temperature for Juneau is 40.5 degrees farenheit. The rainfall yearly is 60 inches in the valley and 90 inches in downtown Juneau.

Alaska's natural resources are potatoes, hay, barley, vegetables, oats, petroleum, natural gas, sand and gravel, gold, fishing, and forestry. Since Alaska makes a lot of money from selling oil, they gave all the Alaskan residents \$1,000, that would be \$20,000 Kroner (I THINK). The governor of Alaska is Bill Sheffield. He lives here in Juneau, the capital of Alaska. I have never met him or seen him except on TV, of course I don't pay much attention to him. The capital has been moved once from Sitka to Juneau and was going to be moved again about 2 years ago. But everyone in Alaska voted not to move the capital so Juneau is still the capital.

The kids in Juneau like to ski, ice skate and play in the snow. By the time we get out of school in the winter-time it is dark and we don't have much time to play outside. The sun rises at 8:00 a.m. and the sun sets at 3:30 p.m. right now. Some of the all-year-round games are roller skating, basketball, ping pong, fooze ball, cheerleading, water skiing, softball, running and many others. In June it stays light pretty much all day then the daylight grows shorter.

I'm very anxious to receive one of your letters. I hope some of the same information is in your letter. Please feel free to ask me anything you want to know about Juneau.

SINCERELY,  
CHAD WALLING



# Thanks for the Hardware, Thanks for the Software— Now What???

By Tom Drazdowski

The title of this narrative is the situation my teacher partner, Harris Thomas, and I found ourselves in September of 1984. We had received three computers and a printer as part of a writing project, borrowed a fourth from our school, had minimum training in the process model of teaching writing (through the Alaska State Writing Consortium), and less yet in computer literacy. And our charge was to create, implement, and evaluate a writing project using microcomputers with our students, and have it all written up for this book by December. I was still looking for the switch to turn the confangled machine on, and had developed a nervous twitch when thinking about how I was going to do all this with my 90 plus seventh graders.

But after a hastily crammed college course in tool software, and migraines reading manuals, we did do it, and survived, and hope to live happily ever after with our newly found knowledge and technology. The questions we are most frequently asked by our colleagues (other than "Are you guys nuts?") are: "How did you do it?" "How did you manage it all?" "How do you get it all into a 45-minute period?" "What do you do with so few machines and so many kids?"

These are tough questions to answer without seeing us actually do it. In a nutshell, you plan and organize and schedule seconds more carefully than a D-Day commander, hope for lots of luck, and pray the troops can pull it off, making your decisions look brilliant. Our kids did. And they didn't take any prisoners.

We started our beach head by combining our reading classes (40 students total), putting them in two person teams, and running the teams through the Apple tutorial program for the IIc's we'd be using. Next, we gave a short group lecture on running the Zardax word processing program, accompanied by a handout stating simple commands. We each took a group of twenty back to the computer and huddled them around as we demonstrated how to create, save, retrieve, and print a document. This entire process took about two weeks.

Then we started them doing literary journals (response logs) for the new novel we were reading, as explained in the writing activity. Again we used teams of two so they could proofread and edit each other's work, as well as help each other when they had a technical problem with the program or computer. Each group had 22 minutes of computer time about every other day.

Since we only had four machines, what about the other 32 kids that were not on computers at that time? They were busy in a variety of other related reading activities, such as reading ahead in the novel and preparing log entries in advance, working on specific skills in a Barnell-Loft series, or working on supplemental novels and reports that are part of the class requirements. In other words, they were busy. Very busy. This allowed us to circulate more freely and help anyone who was having a problem, computer related or not. We found the more structure, the better, which meant that as teachers we had to be doubly organized every day, and flexible enough to shift gears immediately to meet students' needs.

Since these same students were in our regular classes of English and geography, we used these seasoned 40 veterans as our core of computer experts to tackle the second part of our offensive, using the computers to write pen-pal letters with all our 90 plus kids. This time we divided the kids into teams of four or five per computer disk, with at least one person from our reading class serving as captain and resident computer expert. We used time before, during and after school to quickly shuttle all the new recruits through basic training on the Apple tutorial, again gave some large group lectures on using Zardax, (our rooms are separated by a folding wall that can be opened for this purpose), then let them work in two's on the computer as soon as their drafts were ready. Other members of the team were responsible for taking notes, collecting handouts, and explaining assignments to those returning from the front lines. We used the computer to brainstorm ideas for information they could include in their letters, and in

two weeks every student had a well-written computer letter in the mail to a foreign country. We then stopped to regear and await round two as the replies came in.

The kids loved it. They were doing a lot of writing, they found editing was painless on the word processor, and the kids were utilizing machines that held a high interest for them and

always seemed to leave them begging for more computer time. In the end, we loved it too. We've continued the process throughout the year, and have bigger and better plans for the future including an extensive data base on the countries the students have been writing to. So swallow your fears and give using computers to teach writing a try. I expect your troops won't let you down either.





## FROM THE CLASSROOM

### Luann McVey

Luann McVey has lived in Juneau most of her life. After earning a B.S. in biology, she worked as a biologist for the Alaska State Department of Fish and Game for five years. After receiving an M.A.T. from the University of Alaska, Fairbanks, Luann taught first grade for one year and is now in her third year of teaching biology and reading at Dryden Middle School. She attended the 1984 Summer Institute of the Alaska State Writing Consortium in Juneau.

"Amidst much trepidation" (her words!), Luann embarked on a real adventure for her classroom project. Ever the intrepid explorer, she tackled several major new undertakings simultaneously: integrating the word processor into a writing activity she had never tried before (using the process approach that was also new to her), and integrating the computer and small groups into her—as she described it—"too-much-teacher-talk classroom." How she not only survived, but also emerged with a smile on her face—as well as a student-written microscope handbook to use with her incoming students next year—is a story well worth the reading!



## WRITING SKILLS/WORD PROCESSING ACTIVITY: WRITING A MICROSCOPE MANUAL

**Objective:** To publish a manual on the use of the microscope in the biology lab, and on basic cell biology concepts learned in the life science classroom.

**Teacher:** Luann McVey

**School:** Dryden Middle School

**Grade:** 7

**Number of Students:** 26

**Subject:** Biology

**Length of Activity:** 6 weeks

**Computer Access:** 1 Apple IIe on a rolling cart—at first, located within the science classroom; later, moved to an adjoining work room

**Writing Process Emphasis:**

- ☐ Fluency
- ☐ Drafting
- ☐ Responding
- ☐ Revising
- ☐ Editing
- ☐ Publishing
- ☒ Entire Process

### Word Processing Training Procedure:

All but four or five students in this class had some background using computers as word processors, although few were truly expert. Most were hunt-and-peck typists who liked using the Bank Street Writer software because they had tried it out in elementary school. A few students had used Zardax, which was to be our word processing package.

To be sure that all of my students had at least a common foundation in the basics of word processing and the use of Zardax, I demonstrated each step on the computer, using the Zardax handout. I emphasized how to turn the machine on and off, how to create, save, and retrieve files, and how to print documents. We also talked about how to take care of floppy disks and the importance of treating the equipment with extreme care.

Later on, when students were ready for the final editing of their work, I demonstrated the use of several formatting commands, including those for double and single spacing, centering, and margins. These commands enabled them to put the finishing touches on their pieces.

### Writing Assignment Procedure:

After completing a unit on cell biology and the use of the microscope with a class of 26 very bright seventh graders, I decided to involve these students in a "writing-to-learn-project." I wanted the students to present what they knew about the use of microscopes and the structure of the cell, in a manual for the next year's students to use.

I explained this idea to the kids, that I'd like an easy-to-understand manual for students to read before they use microscopes in the lab, because the textbook doesn't do a very good job of introducing microscope use to kids "as it really is." I stressed the idea that an introductory manual would need to explain every single step in simple language, without assuming that the reader knows anything about microscopes or cells, for the manual to be effective with the new crop of seventh graders.

**Prewriting activities:** 1. I laid out some possible topics for "chapters" in the book, and then we all listed other possibilities. Their ideas included the following:

- a section describing "parts of a cell"
- how to prepare a slide
- "what you will learn in the microscope lab" (objectives)
- entries from students' log books, before, during, and after the lab
- "letters to Gizmo," which we had already written, describing the parts of a cell
- how to focus a microscope
- what you "should" see when you look at different objects
- what you "could" see if things went wrong
- notes from a film about microscope usage
- photographs of kids using microscopes
- photographs of what you see through the microscope
- drawings of what you see through the microscope

2. Once the list of topics was on the board, I asked the students to choose two topics they would be interested in tackling in a group, once we began the manual, so that I could assign them to groups according to interest.

3. I asked the students to take out their learning logs and to write down any thoughts that would answer the question, "What do you think/how do you feel about the microscope manual idea? What do you think you will be able to contribute?"

4. I assigned students to groups of four, each working on a different topic. I ended up assigning several kids to groups which weren't their choice, so that I could even up the numbers in each group, and to be sure that the most important topics were covered. I also tried to spread out the ones with word processing expertise. Consequently, they were not all terribly pleased with their topic/group assignments and loud complaints were expressed. I did my best to allay their fears, and I kept the group assignments intact, believing that they would be able to adjust and work together.

5. I asked the students to meet within their groups and to discuss how they would like to tackle the content of their topic or section, so that they'd be prepared to begin writing individual versions of their group's section.

**Drafting:** 1. I asked the students to prepare their own individual renditions of the section, so that they could compile their best works into a group document, to be entered onto the computer.

2. The students met in their groups of four, and took turns reading their own papers aloud to one another.

3. Once they had read their own works aloud, they began discussing the best parts of each, and dictated

their work to a recorder.

4. Eventually, each group completed a document, and was ready to enter it onto the computer.

5. Each group was assigned to a 15-minute slot on a rotating schedule, to enter rough drafts onto pre-initialized disks on the computer.

6. When all groups had completed rough pencil drafts of their microscope manual "chapters," I resumed regular biology lessons, and assigned three groups to 15-minute computer sessions each day. The students in each group were responsible for having classmates correct their work for them, or for getting notes on anything that took place in class while they were working on the computer. With seven groups, I figured that it would take 2 class periods and an additional 15-minute block, to rotate each group through the computer. Eventually, all groups entered their rough drafts onto disks and were ready to start fixing them up for publishing.

**Revision Response/Rewrite:** 1. Each day, I printed out the students' up-to-date drafts, made four copies, and distributed them to each student in the group so that they could edit their own work, first for content, and then for mechanics (spelling and punctuation). We continued to cycle through the computer-drafting-and-editing process.

2. When groups began to feel satisfied that they had "completed" their sections, I began to check through and write suggestions on their drafts. So began another round of editing.



**Editing/Publishing:** 1. Students went through their hardcopies of their sections to catch punctuation and spelling errors, and then I did the same.

2. Students used formatting commands to polish up margins, spacing, etc., to finalize their "fixed-up" drafts for publishing.

3. I xeroxed their final products, and we collated the copies into booklets, which included the following "chapters:"

- Introduction to the Manual
- Objectives
- Rules for the Usage of the Microscope
- Cell Letter
- Cell Parts
- How to Prepare a Slide
- Focusing the Microscope
- What You Should See
- Learning Logs

**Evaluation:** When the entire project was over, I asked everyone to write in their learning logs and answer questions which we later discussed in large and small groups. A few of their responses:

**Student Learning Logs:** The following excerpts from students' logs show the variety of responses to those questions.

**1. What did you learn from your work on the manual?**

"I learned a lot more about cells from reading learning log entries. I also learned how to get along better with people. You know, associate better." *Laura M.*

"I learned more moves on the computer and how to operate it better." *Dustin C.*

**2. What was it like to work in a group on a writing project?**

"It was interesting to share different viewpoints." *Todd G.*

"You have to compromise, a lot, and let people have their own way, because, obviously, not everyone can." *Bill B.*

"It was easier to do the project (the writing) but sometimes we didn't get along." *Tami T.*

"It was fun working in a group on a computer because we were able to get each others' answers and evaluate to find the best one." *Scott T.*

**3. How did your group work together?**

"The group that I was in was a pretty decent group. We worked efficiently together and things went real good. Our system of writing then compiling the info to develop a final product worked well. Everyone seemed to enjoy it, got along and we ran into few problems." *Jason G.*

"I thought our groups were really nice. We could talk and listen without arguing." *Vini S.*

"Our group worked under T.G.'s rules and regulations." *Susan D.*

**4. How did you divide up your work?**

"We got into groups of four and we wrote what we thought we needed to know about how to prepare a slide. Then we chose the best parts and we each typed a section but Suzanne and Janae did most of it and we watched so it wasn't really fair." *Dustin C.*

"Our group did the same amount of writing but the actual typing was done mostly by Scott T. and most of the manual came I guess from Jason."

*Mark W.*

"Billy and Heather seemed to do most of the writing. Laura and I did the organizing and dictating."

*Kim H.*

"I think that Jake M. did the most of the computer work, as he's had more experience with a computer than I have."

*Gretchen M.*

**5. What was it like to write something on a computer?**

"I think working on the computer and the books as a group wasn't too fun or too boring it was in between."

*Marites M.*

"It was fun to see the words go up on the screen when I typed them."

*Susan D.*

"It was faster, because you could make easy corrections."

*Eric C.*

"The computer made it easier because you could change answers to form one, use different English signs, and didn't have to make many drafts."

*Mark W.*

"Since we all have home computers this was nothing new. It was easier to correct mistakes."

*Kirk H.*

"Working with the computer is great, because everything can be done much more quickly."

*Laura B.*

"It was fun!! But it is also easier than regular writing because we all got to add in thoughts at the same time."

*Tami T.*

**6. What could be done to improve the manual?**

"All of the sections are slightly different, so they don't quite fit together. If you would solve this, the manual would be great."

*Jake M.*

"It is o.k. It would have been better if we got someone who knew something about microscopes to write it."

*Katharine D.*

"I think that the learning logs should be included. But instead of having a group for copying down learning logs the groups that have a set topic to actually write about should pick out the logs that fit their topic."

*Jason G.*

"We (the learning log group) were just typists, everyone else was a writer. We didn't get enough time to put enough entries on the computer."

*Deborah R.*

"We could have made the manual better to read if we had added more pictures/drawings."

*Bill B.*

"The manual came out very well. It had lots of easy-to-read information in it."

*Kim H.*

"I think the manual will help the sixth graders a lot."

*Janae F.*

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**Teacher's note:** I think that the students made some very valid suggestions for improvement, but, on the whole, they seemed to really like the manual. I, too, am very pleased with the final product. During the process of writing the manual, the kids learned a great deal about cells and microscopes and, equally important, about how to work together in a group.

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# Fear and Learning in Biology

By Luann McVey

At first, the whole idea of using the computer in my classroom was so overwhelming that I couldn't cope. I couldn't plan any kind of activity involving the computer because there was so much involved in it that was new and scary. Just the thought of teaching basic keyboarding skills numbed my mind and I would search my "to do" list for something easier, something I knew I could tackle. I wished that I had never ever expressed any interest in having a computer in my classroom, or committed myself to a classroom project using computers for writing. Three main fears prevented me from beginning this journey into the unknown. They were my need to "cover the material" in the life science curriculum, my reluctance to teach computer-related skills, and my lack of a classroom management plan that would handle the "disruption" of a computer.

By mid-November, my first fear was realized: I was already way "behind" where I knew I should be in all of my science classes. We were still working on the first quarter's topics, well into the second quarter. I was already losing sleep trying to figure out how to push the kids ahead faster. I felt caught in a bind between the idea that the kids needed to be exposed to all of the basic concepts of biology and human health in a year, and the fact that it seemed to take a long time to get to the point where the students really knew the material. Voices inside of my head were haggling over the question of how thoroughly they need to know it—is it more important for them to understand a few concepts well enough for them to apply them in their lives, or should they just be exposed to a lot of facts about a given topic for now, and then move on to more facts on the next topic?

And then there was the problem of teaching word processing, keyboarding and other computer-related skills. Great—something else to fret about in the wee hours of the morning! After participating in the Alaska State Writing Consortium, I was convinced that writing enhances learning—I was already trying out activities I had discovered in the ASWC Open Program. However, using the computer to do writing was a real stumbling block for me, because I was afraid of teaching my students about something in which my expertise was

minimal. I didn't want to waste precious science time teaching kids about word processing, keyboarding, RAM, bits, and bytes. I had been hired as a science teacher, not a computer expert.

My third and biggest concern was the need for a classroom management plan that would accommodate the computer. We only had one computer, and there were 26 kids in the class! How was I supposed to keep the other ones busy, while a few kids were huddled around the machine? I wouldn't be able to teach the whole class the same things at the same time, as I'd always done before. How could the kids around the computer possibly learn the things that the rest of the class was learning, if they were working on something different? I just knew that the computer was going to create chaos—and, once that happened, how was I going to prevent anarchy among the students? Maybe I would lose control of my class and never get things back in line for the rest of the year! I was convinced that my own confusion and inexperience with the computer would totally ruin my chances for a productive year with these kids, and yet I had committed myself to do something for the grant. I had to come up with a plan and go forward.

So I set off into the jungle, fully expecting the worst. I groped around in the darkness, but discovered that the kids were with me, and we made some headway. We pulled together, those kids and I, and found the journey easier than we had thought it would be. Eventually, we made it out together, rejuvenated, and I suspect that I learned as much as the kids did, in the process.

While attempting to integrate writing, word processing, and life science, I discovered a whole new way of teaching, that allowed students to learn from one another, with less teacher yacking and more interaction between kids. The project profoundly impacted my own teaching methods, and raised a number of questions for me about the ways in which people learn. I am still looking for the answers to some of them.

I never solved the problem of "covering the material." I finished another year of Life Science without getting to our study of plants that is supposed to be a part of our curriculum. I skipped a good deal of other material, as well. Using the computer in my classroom, though, demanded a meth-



od of teaching that broke away from my old teacher-talk-and-textbook routine, to allow all of my students to make contact with our computer. Because we had only one computer for 25 students, I was forced to rely more on group learning, and I was excited by the discovery that it worked! It was more fun, and it was easier and more interesting for all of us than the old ways were. I began to experiment with group learning in my other classes, and found it to be successful. I decided that it is more important to me to give my students a few profound experiences in science than it is to cover X number of topics in X number of days.

I am committed to working hard to provide those kinds of experiences because I believe that kids benefit from personal involvement in investigations into topics that engage them personally. Their learning is enriched and deepened when they share these experiences with other students—by teaching others what they have learned, by arguing and haggling over the meaning of something they have read, and by coming to consensus with other kids to answer meaningful questions. Putting those answers onto paper in a way that makes sense to an inexperienced audience is truly “writing to think,” and those thinking skills far outweigh the specific facts in importance. I try to include the topics deemed important in seventh grade Life Science, without sacrificing this learning/growing process. It’s still evolving for me, too—maybe one day I will feel like I’ve mastered both group learning and “covering the material” at once!

Once we all got down to business, the actual word processing training procedure was surprisingly easy. It helped to have students with some experience with word processing involved in the project. Because so many of them had been exposed to it previously, there was little need for extensive computer instruction, once we had gone over the most necessary commands for the use of Zardax. Keyboarding was a problem—because most kids’ keyboarding skills were of the hunt-and-peck variety, it took forever for them to enter a simple sentence. All in all, I would have felt more comfortable if all of the students in the class had participated in a basic computer class that familiarized them all with keyboarding and the basic commands of Zardax, beforehand.

Classroom management was a large problem, which resulted in growth for all of us. Scheduling and using the computer and working in groups were major obstacles but perfect stimulants for change.

My wonderful schedules with three 15-minute

sessions scheduled for each of three groups were fine in theory, but in practice some kids were so slow that they took 15 minutes to enter three sentences onto their disks. That was frustrating for all of us! I would push a group to hurry up and give the next group a turn, and that first group was feeling “unfairly against” because they weren’t able to finish their piece. That basic computer/keyboarding class might have helped to alleviate this problem. Also, we could have completed the project in two weeks, instead of six, if we had had access to an entire lab of computers, instead of just one.

When a group of students was working on the computer, they were responsible for making up any work (including notes of whole-class discussions) they had missed while they were away. Most of the students were really good about this, but, in a class of less motivated or grade-conscious students, this could be a problem. I liked the fact that they had to depend on one another, and that students were responsible for teaching each other.

My concern about “chaos in the classroom” was legitimate—it happened and, somehow, I got through it. I was not able to switch from teacher-centered learning to group learning overnight, without a backlash. When I first set the kids loose in their groups, I panicked at their behavior. Several kids were drifting around the room talking to their friends.

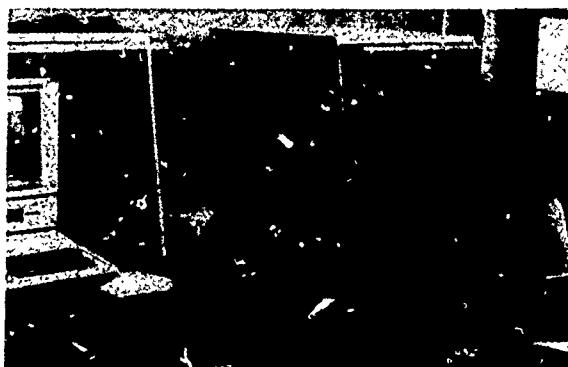
“Hey, Todd, are you going skiing this weekend?”

“Oh, man, do I have to be a group with you? This is going to be *really* fun.”

“Ms. McVey, why did you give me this topic? I asked to work on ‘Cell Parts’.”

It was exactly what I had feared—chaos—OFF TASK BEHAVIOR! I played Patrol Teacher McVey, getting them back to their groups and back to work.

The next day, I saw more productivity—some groups were actually coming up with some nice pencil drafts, which heartened me.



On the third day, kids who had been goofing around realized the consequences of their behavior because they ended up with more homework than those who had been working—the productive ones had finished their usual lessons in class, and the goofers had lots left to do!

I found it personally frustrating, not to be able to deal with the whole class as a unit. One day, I turned the kids loose to study for a test and let a group work on the computer. Again, I had trouble with kids who dilly-dallied and didn't really review. I wasn't sure that they really were prepared for the test, and I had no opportunity to discuss the concepts of the test with everyone, prior to taking it. The role shift, from being "the one in charge" to the "resource person" was difficult for me, at times.

Once the students knew their responsibilities and their roles within this new class structure, everything went more smoothly. We were able to resume normal lessons, while small groups continued to rotate on the computer.

Philosophical issues aside, throughout the process of writing the manual, I noticed specific areas I will be addressing when I tackle similar projects in the future:

1. I would check sooner for plagiarizing! When our first computer drafts were due, I noticed that one group had chosen to lift an entire section of the manual straight out of our science textbook.
2. I would ensure that the topics assigned to each group gave an equal challenge, to distribute the creative potential more fairly.
3. I would have each group integrate learning log entries into their section.
4. I would be sure to train students in both small group work and in the use of the entire writing

process, through small practice sessions and modelling, before beginning such a major project.

This project induced an incredible amount of anxiety in me. It's hard to venture out of the familiar and into the unknown! However, I'm glad that I persevered, and I'm grateful that my students remained as involved and enthusiastic as they did, because we all experienced so much growth from seeing it through to the end. When I began this project with my students, I had hoped to use the computer to put "thinking about science" into writing. Although we accomplished this, the greatest part of our collective learning was about group process: students learned more about participating in group problem-solving, and I discovered an exciting teaching method that seems infinitely more powerful than those I'd used previously. As a result, I'm aware that I am more open to my students' feelings and concerns, and that the atmosphere in my classroom is more student-centered now than it used to be. There is less "teacher-talk" and more "student-to-student" interaction—about science content—than ever before. I think the kids felt better in my classroom, this year, and their evaluations of me as a teacher were much more positive this year than last year. It's true—taking risks can lead to amazing change!

Now that I've tackled the three main fears that kept me from using the computer for writing in the first place, I'm looking forward to using the process again to enhance students' learning of science content and skills. I'm curious to explore the whole realm of "writing to learn" in more depth, to find out just how great a difference it does make in my students' understanding of science. I'll work on this next fall, when I return to my classroom—to learn, as well as to teach.





Excerpts from "Welcome to Microscope Lab  
A Manual for Beginning Biologists"  
by Ms. McVey's Sixth Period Life Science Class

Introduction To This Manual

This manual is for how to use a microscope. The sixth period for other students of. Within this manual information about cell rules to follow when you should see when you complete the chapter microscope, and have GOOD LUCK!

By Traske

OBJECTIVES

At the end of this unit you should be able to...

1. explain what the cell theory says.
2. label each part of the microscope on a diagram.
3. know what each part of the microscope is for.
4. follow the rules for a microscope to look at things.
5. figure out how multiplication.
6. label each part.
7. tell what each.
8. look at some.
9. tell the difference between animal and plant cells.

1. Carry
2. Work
3. Always
4. Always
5. Use
6. Care

platform

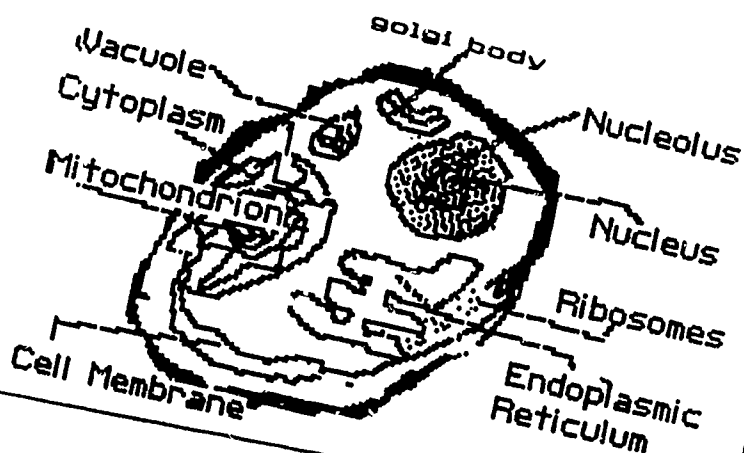
By

endoplasmic reticulum, E.R. E.R. is a network of tubes connecting the cell membrane and the nucleus, and they're involved in the movement of materials in a cell.

Though plant and animal cells are a lot alike they have three differences. The first one is that plant cells have chloroplasts which is the structure in which photosynthesis occurs. The second difference is that plant cells have a cell wall which is the outer, non-living wall around plant cells. The last difference is that plant cells make their own food in a thing called chloroplast and animal cells don't.

Written and edited by,

Tami Tangen, Marites Manuel, Tina Lee, and Taj Bell



## CHAPTER SIX:

### Final Thoughts: Surprises, Suggestions, and Summing Up

*. . . It worked! . . . We survived!*  
Carolynn Swanson

*Wow! Look at all this stuff I said!!!!*  
eighth grade student  
as his writing rolled out of  
the printer

#### Contents:

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- 118 Any Final Thoughts?
- 120 Summary: High Touch and High Tech
- 122 The New Beginning

## What Was Your Biggest Surprise or Realization In Doing this Project?



... that it worked! That we survived! That we pulled it off without any major difficulties ... that the only person (in the classroom) who had hang-ups was me! And I made it! I really didn't think it would work as well as it did. I thought there were too many things that could go wrong: broken machines, lost disks, fights over computer time, etc. (The only time there was any problem at all was when there was a substitute. My lesson: No computers if I'm not there!) The students really enjoyed it overall.

I went into word processing with a lot of misgivings, in that I didn't feel I knew enough about it to teach it competently. And now I'm much more comfortable about that with the computer. It won't matter to me next year to say, "Hey, you guys, I don't know how to go backwards on this thing—we're going to have to find out together!"

I'm also surprised now that I no longer feel that a separate small lab in the library is the best arrangement. I thought during the project I'd be making an argument for using a small lab, but I was surprised at the management problems that arose. So now I'd rather have one computer in my classroom—or an entire large lab, not in-between with half the class somewhere else.

Carolynn Swanson



... that I didn't have to know it whole and totally, and that it all still worked. It was wonderful. I felt I could be a real dummy, a little frightened. I guess we all worry a little about appearing foolish in front of our students, and that wasn't even a problem. I could say, "I don't know either, let's find out." But the best part was that they were helping each other. I think high school is often such an isolating experience for kids, and the project showed me that it doesn't have to be that way. Learning happens when kids teach kids, and they feel more connected.

Alma Harris



... It certainly seems to add a positive dimension to writing for the student. Though I don't have much experience myself, I can see the benefit of having a computer available in the classroom, if security could be taken care of. That's a big concern for me in my teaching situation.

Shirley Carlson



... that I could get them to write so much. It was surprising to see someone like one student I had—who normally would put three sentences down on paper and consider it absolutely done—to see him sit down and write several pages of coherent, interesting material was wonderful. He was involved and focused . . . I never thought I would see that amount of material, much less the interest in the activity.

Didi Ryall



... that students could be so productive in small groups! That they could work on computer projects together and do just fine. I was also surprised that the computer writing project didn't consume the science content, and the rest of the class. It was a good feeling to see that we were going to actually crank out that handbook, and get a good product.

Luann McVey



... that the kids were already so comfortable with the idea of a computer and picked it up so much faster than I did. And I was pleasantly surprised by the number of kids that responded positively to writing on the computer—with just being able to write. It motivated them not just in writing but in the whole class. Their attitude seemed to change, because they were successful at something.

It was partly, too, the benefit of the process approach itself that their attitude changed. In fact, I don't know that I can say which changed their attitudes more toward writing, the computer or the process approach techniques I learned in the Alaska Writing Consortium, because I was trying both at the same time, and was new in both areas. They go hand in hand so well.

Nancy Thomas



It did take a lot of time for us. We felt all our spare time was here. We either had kids in here and were teaching them computer things, or we were in here teaching ourselves computer things—our prep period, and our before and after school time wasn't spent doing much else besides the project or getting the computers ready, for a while there.

Tom Drazdowski

... that we could pull it off with so few computer and so little time . . . and that it was easier than we had anticipated in terms of getting the kids going on it, with a management system that worked. I was also surprised at the amount of time I had to give up from my geography class, waiting until everybody was finished with the computer before we moved on.

Harris Thomas



*I don't think I had any expectations, really, so I wasn't particularly surprised by anything. I just read the manual, tried things out as we went along, and did a lot of learning along with the kids . . . I did begin to realize that there are some students who simply are going to have trouble with some kinds of word processing—these students have difficulty thinking logically—step-by-step. Clear thinking seems to be a predictor of success with this, perhaps. Those who can't think clearly aren't going to be able to handle a program with lots of commands.*

**John Wyatt**

*. . . how easy it was for me to just go in and DO it! I had worried for months. If I had to tell another teacher one thing, I'd say: it's ok! You can do it! Within five minutes of the first day, I was just fine. I was simply amazed at how little I needed to know, how smoothly it all went, how much the students enjoyed it and helped each other.*

**Linda Bischoff**

## Any Final Thoughts?

Teachers going through this should have meetings, like we did, even if once a month, get together in workshops, share ideas. It gets your confidence up, and your energy level up, and that's important. After a while, you need all the boosts you can get. We needed to talk to each other.

**Linda Bischoff**

Something that Tom and I took for granted is that we are working together so we could bounce things off of each other—share ideas . . . It's very important to talk to someone else before you try some of this. If you're doing it all alone, it'd be doubly, doubly important to have your act together.

**Harris Thomas**

The computer is another tool, a useful tool, a motivational tool. It's one that realistically all the kids are going to have to know how to use . . . I can understand their anxiety, and I can understand their enthusiasm. I felt bad that I had to use all my own time in a sense. I think the kids appreciated it too, that we were using our time and their time on something they wanted to know—learning how to run that machine back there.

**Tom Drazdowski**

It adds flexibility . . . it's another tool, you can use it or not for a particular unit. But a key is to have enough computers for what you are trying to do.

**Harris Thomas**

Teachers who really want to feel good about one area of their teaching should become familiar with the Writing Consortium—I don't want to sound like an ad, but if teachers could get to know what I now know about writing and about teaching kids since having taken the Summer Institute—it really doesn't matter if you have a computer, or the best facilities in the world—it wouldn't matter—it's the **teaching** that's so rewarding, the process approach. If this book can help just one other teacher see that, I'll feel good about doing this whole project.

Would I want to use computers again to teach writing? Definitely. For two reasons: One, it's a powerful motivator—kids who never thought they'd like to write, began to enjoy writing; and two, it's a great publishing tool. They loved seeing their words come out of that printer, looking so professional.

**Nancy Thomas**

I am more of a whole class teacher, so one of the big things having a computer in the classroom taught me was the value of small group learning . . . Before I always worried that it wouldn't work, that kids would fool around too much, but since our computer project, I've begun to use small groups much more. I saw a lot of learning happening when students were working together—talking, or writing or figuring things out together.

Although I was very worried at the beginning, I would still definitely do it again. The main thing I would change is that I would focus less on producing a perfect final product, and more on the thinking and learning with the computer. All the formatting and beautifying wasn't as important to me in the long run.

**Luann McVey**

They need to get word processing somewhere, business classes or English classes I don't know . . . We certainly owe it to the college bound . . . I don't think I should have to teach word processing as a skill. But I think it's an invaluable tool for teaching writing. My primary responsibility is to teach them to write; if I can use the computer to do that, fine. It does seem to make a big difference for kids. And right now I just don't know if it's the novelty of using it, or what. That remains to be seen.

**Carolynn Swanson**

Learning to use word processing should be student choice, just as learning to type is a student choice. The opportunity to learn should be made available and if the equipment can be obtained for a lab, the English department could offer it.

**Shirley Carlson**

I'm still an advocate of teaching word processing as a separate class, much like the science and math departments have done it.

**John Wyatt**

Computers need to be an integral part of the education of the college bound . . . those kids need that computer. The seniors put their resumes and college applications, essays and so on on their disks—and used them, called them up again and again. It's obviously a real advantage for them.

**Alma Harris**



*It was the most successful project I did all year, in terms of the enthusiasm the students generated among themselves. They enjoyed-fought over-using the computers. Most of them finished their final projects, unusual for my bunch. Part of it was the novelty, I can't say how much exactly . . . Part of it, too, was the enthusiasm of some youngsters spilling over onto those who weren't that excited to begin with. It sort of caught on—a group feeling, especially among whoever was working in the lab at the time. In that situation they were able to talk, to help, to interact with each other freely.*

*I no longer see the computer anymore as a potential problem, but as one more tool I can utilize in whatever way is comfortable for me. It's no longer the challenge of how to fit the computer into the program, it's simply where does the computer fit and which kids will be the most comfortable with it.*

*It's not a roadblock, it's a facilitator.*

**Carolynn Swanson**

*It was so valuable, if I were to do it over, I wouldn't just block out three weeks. I'd go for an entire quarter. And we'd work all the way from sentence combining to a short story, on the computer. The kids would have been more than willing to. Their attitude was, "Thank you! Thank you! for what you've taught us with this." Someone thanking you for what you've imparted to them with such minimal knowledge. . . ??? They just felt so good about themselves and their writing. And that didn't stop once we left the computers. It was a very, very rewarding experience. It was definitely worth all the worry.*

**Linda Bischoff**



## Summary: "High Touch" and "High Tech"

*I don't want to see students relying on the computer as a stimulus to thinking. I want to see the computer used as a facilitator of thought. And I don't want it to bypass the teacher. I want the teacher to continue to be very important in listening to the kids read their stuff and asking the tough questions that go forward to publication. To provide other audiences in the classroom, to learn how to help a kid in choosing a topic, doing the draft, questioning the second draft, helping to tune the language in the final draft. We can never bypass that with software. And I don't want to. You've got to have voices responding to voices.*

Donald Graves, writing researcher  
interviewed in  
**Classroom Computer Learning, 3/84**

Donald Graves envisions "voices responding to voices" in the classroom—the distinctive voices of people who are writing and talking and reading about what they know; people who are responding to, and learning with, each other. In such a classroom, writing is a living, evolving thing that is shaped and shared while it is still "becoming."

That shaping and sharing is a process that fosters ownership, investment and pride. Writing is no longer a painful, pointless exercise in pleasing the teacher or doing tedious workbook drills, because there are real audiences to write for and real reasons to be writing. Instead of painfully tiptoeing across minefields of potential errors while trying to compose, students are freed to discover meaning and experiment with ideas—(quite enough to worry about!)—in early drafts. They know they can work on correctness at the later stages, in the context of what they're trying to say. And teachers are freed to act as partners in writing. Teachers can model and share their belief in writing as a way of thinking and learning.

Once writing is released from the grid-lock of a premature error/product/teacher focus, the computer can then lessen the pain and anxiety of writing even more—making revision and editing swift and dynamic. Word processing relieves writing of mechanical tedium, mess and delay. It invites experimentation and extension, since change does not result in punishing drudgery. Students are freed to focus on shaping ideas, composing, thinking. And, they enjoy mastering a machine that so dignifies their writing efforts; they

are empowered by this new tool for writing. The public nature of the screen and the ease of printing clean text makes publishing and sharing with real audiences a natural, integral part of the process. It enhances writing as interactive collaboration.

When the writing process and word processing come hand-in-hand into the classroom, this resulting collaboration and cooperation invigorates the classroom. "Voices" begin "responding to voices." The classroom de-centers. Learning becomes active by being interactive. Students talk to each other about computers and because of computers, about writing and because of writing. In the process, they are "translating" new knowledge into their own language, making it truly their own.

Roles shift. Students become apprentices in their own learning, and teach each other. Teachers are partners in dialogue about writing and computers. They learn from and with their students.

Teachers can move from being mere dispensers of knowledge to facilitators of students finding and forming their *own* knowledge. They teach and model not so much *what* to learn as *how* to learn, *how* to access information, *how* to cooperate. Ultimately, teachers can become fellow researchers and learners along with students. This is part of what happened in the Juneau Computer/Writing Skills project.

These ten secondary teachers were trying things they had never tried before. So they asked questions. They took risks. They observed their own teaching and learning, they observed their students teaching and learning, and they reflected upon and articulated their own experiences and realizations—all the fundamentals of classroom-based research. It is a special kind of inquiry process that turns the classroom into a community of learners. Students and teachers consciously and interactively learn from each other.

Such a classroom climate becomes "high touch," to use John Naisbitt's term from **Megatrends**. It balances the "high tech" impersonality of this Information Age, and the fragmentation and alienation that is so much a part of the secondary school experience for many students. "Kids have a chance to connect with each other," noted Alma Harris. They have a chance to connect within their learning and growing awareness of their own knowledge.

Writing, too, is "high touch.." Naisbitt observed

that "high touch" movements and activities emerge and grow in direct proportion to the increase in technology in our society—that these are not divergent trends but two sides of the same coin. ". . . Whenever new technology is introduced into society, there must be a counterbalancing human response—that is, high touch—or the technology is rejected. The more high tech, the more high touch." (1982, p.35)

In recent years there has been intensified interest and research in writing and the teaching of writing: the establishment of teacher training programs which explore the writing process like The National Writing Project or the The Program in Writing at the Breadloaf School of English; the work of researchers like Janet Emig, Donald Graves, Sondra Perl, and the British group including James Britton, Nancy Martin, and many, many others; the exponentially increasing number of classroom teachers becoming involved and committed to process instruction in writing; and so on. It's intriguing to note that this growing interest in writing has closely paralleled the growing interest and excitement about microcomputer technology in education, as well as society—the explosion of microcomputers in the home, the workplace, and the classroom.

It seems that even as we professional educators began to enter the technological world, we also became more curious about and attracted to ideas

about how human beings make sense of their world,—technological or otherwise!—how we discover and create meaning through language. We are interested in how it is that the act of writing makes sense of the welter of images, thoughts, and feelings—the "great tangle of seaweed" in the subconscious mind, how writing gives form and substance to what was before only shadows, hunches, and pre-verbal awareness. Even as we are drawn to the power and the potential of the computer as a tool, we are simultaneously drawn to the power and potential of writing, as a way to both articulate the self, and share the self.

This, then, is the power of the "two revolutions." As a "high-touch/high-tech" combination, they enhance and balance each other. They are liberating and powerful, opening up the classroom to collaboration and interaction, to a sense of community. In such a context, writing gives young people personal power. It gives them access to their own voices, their own sense of themselves—sometimes, as Didi Ryall discovered, for the first time in their lives.

Writing says: "This is who I am!" "This is what matters to me!" "This is what I know!"

Writing says: "I can make a difference!"

Writing says: "I *am*!"

And that's a rather important piece of information for our students to have, in this, the Age of Information.



## The New Beginning

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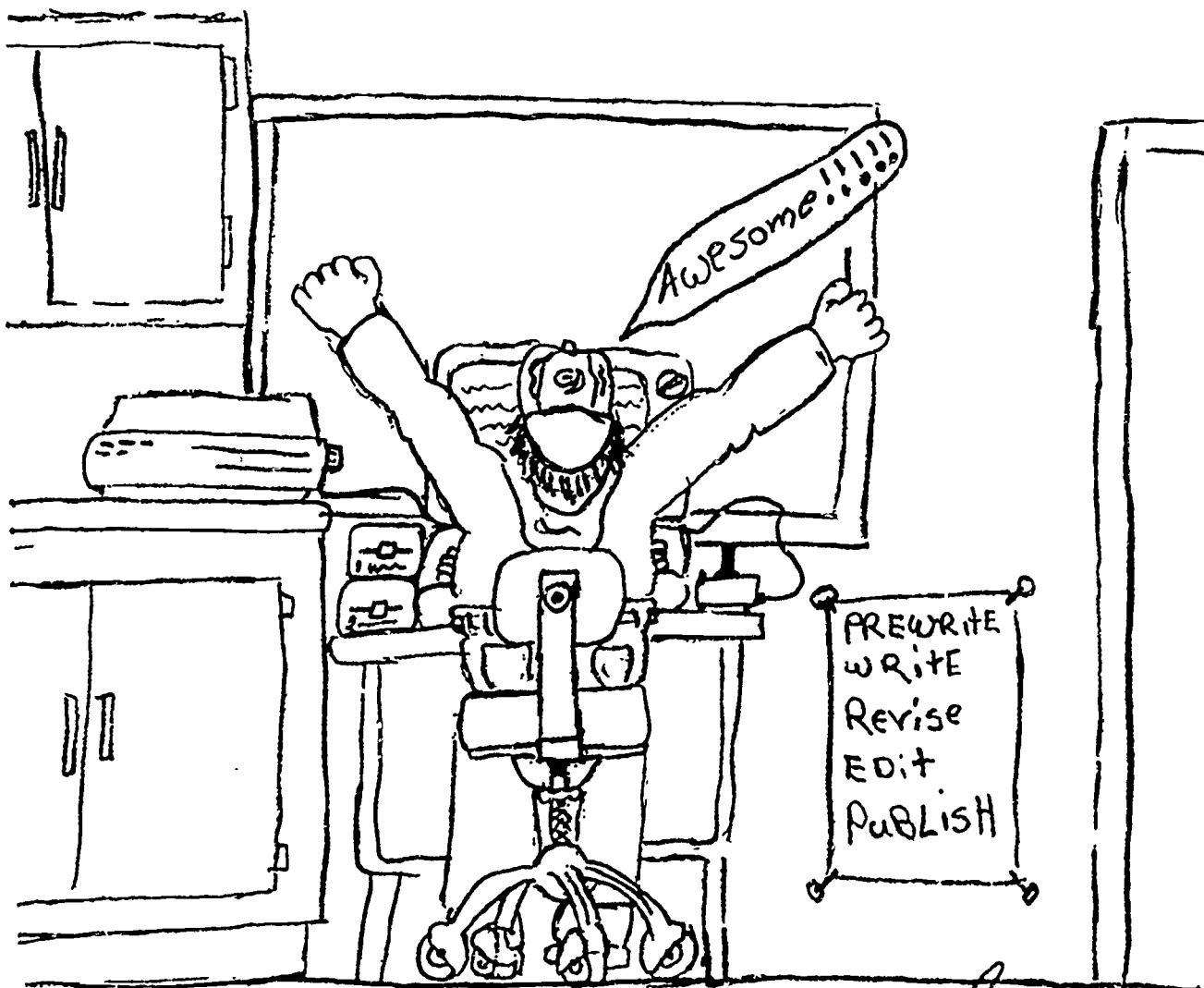
Over the year, my students have been exposed to many kinds of writing: letter writing, personal narrative, fiction, reference material, I-Search papers, etc. Last year I wouldn't have thought that was possible. What the Writing Consortium and the process approach have given me is that now I expect much more from my students. They can write. They want to write. They do write. The process approach has done that.

They've written for different audiences, in different styles and formats. I am so pleased with them. I'm pleased that I've asked them to do it. And they are pleased, too, because they are doing what regular classes are doing. In fact, with the exception of a couple of very very low ability students—I would stack my kids up against any regular class as far as skills are concerned. A big part of that is the process approach—that whole different way of looking at things.

I never have a student complain about writing now. Never. It's another world in my classroom.

Didi Ryall

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Stan  
Whitely  
"85"

## REFERENCES

- Abernombie, M.L.J., and Terry, P.M. **Talking to Learn: Improving Teaching and Learning in Small Groups.** University of Surrey, England: Society for Research in Higher Education, 1978.
- Adams, Anthony. **Teaching Humanities in the Microelectronic Age.** Milton Keynes, England. Open University Press, 1983.
- Atwell, Nancy. "Class-Based Writing Research. Teachers Learn from Students" **English Journal.** January 1982. 84-87. National Council of Teachers of English, Urbana, Illinois. Reprinted with permission.
- Barnes, Douglas. **From Communication to Curriculum.** New York: Penguin Books, 1976.
- Barnes, Douglas and Todd, Frankie. **Communication and Learning in Small Groups.** London. Routledge and Kegan Paul, 1977.
- Berthoff, Ann E. **Forming, Thinking, Writing-The Composing Imagination.** Montclair, New Jersey. Boynton/Cook Publishers, 1982.
- Berthoff, Ann E., **The Making of Meaning.** Montclair, NJ: Boynton/Cook Publishers, 1981.
- Bridwell, Lillian, Johnson, P., Brehe, S. "Computers and Composing: Case Studies of Experienced Writers." In A. Matsushashi (ed), **Writing in Real Time: Modelling Production Processes.** New York. Longman, 1983.
- Britton, James. **Language and Learning.** London: Penguin Books, 1970.
- Calkins, Lucy McCormick. **Lessons from a Child.** Exeter, New Hampshire. Heinemann Educational Books, 1983.
- Daiute, Colette, A. **Writing and Computers.** Reading, Massachusetts: Addison-Wesley, 1985.
- Daiute, Colette, A., "The Computer as Stylus and Audience." **College Composition and Communication**, 34 (May 1983): 134-145.
- Davis, James E. and Hazel K. (ed.). **Focus: Computers in Teaching English.** Athens, Ohio. The Southeastern Ohio Council of Teachers of English, Vol IX (Spring, 1983).
- Emig, Janet. **The Web of Meaning: Essays on Writing, Teaching, Learning, and Thinking.** Montclair, New Jersey. Boynton/Cook, 1983.
- Graves, Donald H. **Writing: Teachers and Children at Work.** Exeter, New Hampshire. Heinemann Educational Books, 1983.
- Green, John. "Kids and Writing. An Interview with Donald Graves." **Classroom Computer Learning**, March, 1984, p.21-22, 28.
- Knoblauch, C.H., and Lil Brannon. **Rhetorical Traditions and the Teaching of Writing.** Montclair, New Jersey: Boynton/Cook Publishers, 1984.
- Knoblauch, C.H., and Lil Brannon, "Writing as Learning Through the Curriculum." **College English** 45 (September, 1983): 465-474.
- Flower, Linda, and Hayes, John. "A Cognitive Process Theory of Writing." **College Composition and Communication**, 32 (1981): 365-387.
- Freedman, Aviva, and Pringle, Ian, (ed.). **Reinventing the Rhetorical Tradition.** University of Central Arkansas: L and S Books, 1980.
- Hairston, Maxine. "The Winds of Change: Thomas Kuhn and the Revolution in the Teaching of Writing." **College Composition and Communication**, 33 (February 1982): 76-88.
- Marcus, Stephen, and Blau, Sheridan. "Not Seeing is Relieving: Invisible Writing with Computers." **Educational Technology**, April, 1983. 12-15. Reprinted with permission. *Educational Technology* is published monthly, twelve times a year at \$69.00 by subscription by Educational Technology Publications, Inc., 720 Palisade Avenue, Englewood Cliffs, New Jersey 07632.
- Mayer, John S., and Lester, Nancy B. "Putting Learning First in Writing to Learn." **Language Arts**. 60 (September, 1983): 717-721.
- McCurry, A., McCurry N., Parr, K., **APEL Handbook**, Yukon-Koyukuk School District, Box 309, Nenana, Alaska 99760.



- McKenzie, Jamieson. "Accordion Writing—Expository Composition with the Word Processor." *English Journal*. September 1984: 56-58. National Council of Teachers of English, Urbana, Illinois. Reprinted with permission.
- Perl, Sondra. "The Composing Processes of Unskilled College Writers," *Research in the Teaching of English*, 13 (1979), 317-336.
- Perl, Sondra. "Understanding Composing." *College Composition and Communication*, 31 (Dec. 1980): 363-369.
- "School Uses of Microcomputers." *Reports from a National Survey*. Center for Social Organization of Schools, the Johns Hopkins University Issue 1: April 1983, p. 7. Issue 6: November 1984, p.1.
- Schwartz, Helen J. "Teaching Writing with Computer Aids." *College English*, 46 (March, 1984): 239-247.
- Shaughnessy, Mina P. *Errors and Expectations: A Guide for Teachers of Basic Writing*. New York. Oxford University Press, 1977.
- Standiford, S., Jaycox, K, and Auten, A. *Computers in the English Classroom*. Urbana, Illinois: National Council of Teachers of English, 1983.
- Turkle, Sherry. *The Second Self: Computers and the Human Spirit*. New York. Simon and Schuster, 1984.
- Weisenbaum, Joseph. *Computer Power and Human Reason: From Judgement to Calculation*. New York. Penguin Books, 1976.
- Wresch, William. "Computers in English Class: Finally Beyond Grammar and Spelling Drills." *College English* 44 (Sept. 1982): 483-490.
- Wresch, William, (ed.). *The Computer in Composition Instruction: A Writer's Tool*. Urbana, Illinois: National Council of Teachers of English, 1984.
- Torbe, Mike, and Medway, Peter. *The Climate for Learning*. London: Wardlock Educational, 1981.
- Vygotsky, L.S. *Mind and Society*. Cambridge, Massachusetts: Harvard University Press, 1978.
- Vygotsky, L.S. *Thought and Language*. Cambridge, Massachusetts: Massachusetts Institute of Technology Press, 1962.
- Zinsser, William. *Writing with a Word Processor*. New York: Harper and Row, 1983.

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## Appendix

### Useful articles from other sources:

- 127    **Accordion Writing—Expository Composition with the Word Processor**  
by Jamieson McKenzie
- 129    **Not Seeing is Relieving: Invisible Writing with Computers**  
by Stephen Marcus and Sheridan Blau
- 133    **Class-Based Writing Research: Teachers Learn From Students**  
by Nancie M. Atwell.

# Accordian Writing—Expository Composition with the Word Processor\*

Jamieson McKenzie

While computer stores offer half a dozen books on word processing, most of which promise "wonders," a quick skimming usually leaves readers disappointed. After ten chapters on loading disks, saving files, formatting and editing, there may be only a single chapter on writing techniques. Few books explain how composing with a word processor (WP) can be radically different from composing with pens, pencils, and typewriters.

Those who spend hundreds of hours writing with the WP report major transformations of style, productivity, and process. Fluency grows, flexibility develops, and originality springs from its hiding places. Liberation from the fear of errors can set creative expression in action.

This article will describe a type of composition unique to the WP, a process discovered by me while struggling over a difficult section in my doctoral dissertation. The process is called "Accordian Writing" because it involves expansion of an essay from the inside out, followed by compression of the essay as editing takes place.

Most expository writing with pens, pencils, and typewriters is linear. The writer typically begins with an outline and proceeds to write the topic sentence of the first paragraph. The next step is to build the supporting sentences and shape a good transition into the next paragraph. Such a process puts an extraordinary amount of pressure on the writer to know in advance what should be written. While the eraser provides some flexibility to change ideas and the pen or pencil can be combined with scissor and paste to move sections around, the old technology of writing generally places a premium on control of thought in advance of writing.

## Step One: Listing Ideas

Accordian writing allows for composition that matches the kaleidoscopic nature of thoughts wandering through the mind. In drafting an article about the elements of good teaching, for example, accordian writing would start with a divergent listing process. The writer jots down every aspect of good teaching that comes to mind, discarding none. The resulting list might appear on the WP screen as follows:

- empathy*
- sense of humor*
- dramatic style*
- passion*
- high energy*
- preparation*
- control*
- the ability to translate*
- an array of strategies*
- untiring high standards*

- high expectations*
- of self*
- of students*
- of parents*
- of administrators*
- enough resources*
- inspires independence*
- accepts divergence*
- nurtures inquiry*

And so on.

The list might well grow to 30 or 40 ideas. And the author might then store the list on a disk while thoughts percolate for several days. In moments of daydreaming (while driving, running, or sitting bored), new additions might spring forth. These can be added to the disk until the author is satisfied.

## Step Two: Narrowing Focus

Time for compression. The author reviews the list and decides that several items aren't worth commenting on in this article. With a few swift attacks of the cursor, the list is pared down to six elements that the author cares most about:

- empathy*
- passion*
- high expectations*
- inspires independence*
- respects divergence*
- nurtures inquiry*

## Step Three: Building Paragraphs

The next step is expansion again. The writer looks at the list and zeroes in on "passion." The cursor moves to "passion" and constructs a topic sentence.

*Passion is central to excellence, whether it be the passion that led Van Gogh to paint without selling many paintings, Emily Dickinson to write without publishing many poems, or Socrates to ask questions until the State gave him a fatal dose of hemlock.*

At this point, the writer may jump to other spots and write other topic sentences, or the flow of ideas may lead to an example, anecdote, or supporting details for the "passion" paragraph. The next view shows some of both techniques, each section numbered to show the sequence of writing events:

*empathy (4) Following work by Carl Rogers, research has confirmed what many have suspected for a long time [\*source]. Student achievement is positively associated with teachers who measure high in empathy.*

*Passion is central to excellence, whether it be the passion that led Van Gogh to paint without selling many paintings, Emily Dickinson to write without*

\*Reprinted with permission.

National Council of Teachers of English, 1984.

*publishing many poems, or Socrates to ask questions until the State gave him a final dose of hemlock. (5) [load disk -3 on passion].*

*(1) Students are most likely to achieve when teachers express high expectations. But it takes far more than words. If the history teacher stands up and lectures a group on the 20 page research paper he expects from each and every class member, the results might be very disappointing. The expectations must have some reasonable basis in reality. They must also carry an emotional and personal dimension. The teacher must communicate confidence to the student.*

*inspires independence*

*(3) students at teacher's desk*

*parent help with homework*

*stress on following prescribed curriculum*

*persistence????*

*concentration????*

*respects divergence (2) research on creativity [\*source] shows that measured creativity drops precipitously at the fourth and fifth grade levels in this country. There are two main hypotheses for why this might occur. One is the peer pressure for conformity. The other is "right answer teaching."*

*nurtures inquiry (6) Research on classroom questions shows that few teachers allow much time for thought [\*source]. Average wait time as measured in [\*source]'s study was [\*statistic]. The same research shows that teacher questions outnumber student questions by a factor of 27 to 1. Careful review of this research points to the rarity of student involvement in the questioning process. Lack of involvement usually suggests lack of ownership and lack of interest. Furthermore, if a major goal of education is life-time learning, then a priority must be placed upon students forming their own questions.*

The techniques used above deserve explanation.

Change #1: Standard linear development of a paragraph with supporting ideas expanding the topic sentence.

Change #2: The writer jumps to a different topic before completing development of the "high expectations" theme. In this case, a piece of research came to mind, and the writer wished to get it down before forgetting it. Not taking the time to find the exact citation, the writer types in [\*source] to indicate that it must be supplied at a later time when the computer's search facility will be able to quickly locate all such "source" spots rapidly. The writer merely summarizes the research, knowing it can be returned to later to draw connections, and show implications.

Change #3: Remembering lines of kids waiting for teacher help after getting "stuck" on math problems, the writer jumps once again to "independence" and starts listing issues that need development at a later time. There is no attempt to form sentences or complete thoughts.

Change #4: Back on the research theme, the writer jumps up to list a finding with regard to "empathy." No attempt is made to draw implications.

Change #5: Having recently completed an editorial piece on the importance of passion in teaching, the writer

makes a note to load relevant sections from that piece into the new one. The WP allows one to mine the same vein many times.

Change #6. This time a group of research projects are summarized, and the writer begins to comment.

#### Step Four: Refinement

The process continues until all six original phases have been fully developed, each deserving several paragraphs or pages. When the expansion phase is completed, the writer uses the cursor much like a paring knife, returning to the quickly entered phrases and sentences to cut out the weak language, reduce verbosity and upgrade the choice of words. At this point it is possible to pay considerable attention to sentence structure, transitions, and coherence. If parallelism is desirable, the cursor rapidly brings sentences, phrases, and clauses into line.

#### Conclusion

When the automobile first appeared, people kept thinking of it as a "horseless carriage." So with the WP. Most commentary stresses the editing features of the WP. Just as the automobile drivers learned to leave their whips at home, it is time we recognize the fact that writing with a WP represents a fundamentally different way for us to bring our written expression into line with the way we think.

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# Not Seeing Is Relieving: Invisible Writing with Computers\*

Stephen Marcus and Sheridan Blau

## Writing: Visible and Invisible

It has been suggested that writers need to review, or scan, their evolving text in order to exercise control over their emerging ideas.<sup>1</sup> However, recent experiments have indicated that not only is this not always the case, but that additional benefits derive from producing text which is, in fact *invisible* as the writer composes.<sup>2</sup> Using empty ballpoint pens and paper backed with carbon, groups of teachers and graduate students were given assignments to produce texts of varied cognitive complexity: descriptive, narrative, expository, and argumentative prose, and a poem. For many of the participants in an early study:

The absence of visual feedback from the text they were producing actually sharpened their concentration on each of the writing tasks, enhanced their fluency, and yielded texts that were more, rather than less, cohesive. Some students reported that under the constraints of the experiment, they produced better poems than they had thought themselves capable of.

The invisible writing procedure seemed to force the participants to give more concentrated and sustained attention to their emerging *thoughts* than they ordinarily gave when composing with a working pen or pencil. Some students reported that when they wrote under ordinary conditions they would usually allow their minds to wander after each sentence or pair of sentences. Rarely did they keep their attention focused undeviatingly on a single train of thought for more than one or two sentences. In addition, students noted that their usual pattern in composing was to interrupt the flow of their thought frequently to edit and amend the language, syntax, or mechanics of their developing text. The experiment suggested to them that their usual pauses obstruct their fluency and, more importantly, dilute their concentration. Under the conditions of the experiment, they could neither edit, nor rewrite, nor allow their attention to stray from the line of thought they were developing.

Later experiments with other groups of teachers substantially confirmed these results. People found invisible writing a congenial method of composing. While experimental conditions struck them at first as a slight inconvenience, they felt it made virtually no difference in their fluency or copiousness while doing the descriptive task. As they progressed through the narrative, expository, and poetic tasks, it actually became for many of them a salutary, even a therapeutic, device. Many found it to be a particularly powerful aid to their concentration and a spur to their creativity.

## Invisible Writing with Computers

Word processors provide an extremely useful tool

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for exploring invisible writing. Simply by adjusting the contrast and brightness knobs, students may eliminate immediate visual feedback yet still be recording their text. The writing may be examined by merely readjusting the screen display, and, of course, it is still available for editing, saving, and later printing.

Later discussion will note how invisible writing procedures fit into considerations of the composing process *per se*, its teaching, and computer-assistance in composition instruction. The present section of this article describes some initial explorations of computer-assisted invisible writing done with college students enrolled in freshman English classes. The courses were part of the regular first-year English program, but were specially designed for students in our university's Educational Opportunity Program.<sup>3</sup>

## An Experiment

Three separate groups were used, each of which had been using word processors for writing papers (total  $n = 47$ ). Each group was given a ten-minute lecture on the composing process that included a discussion of "free writing," a technique for developing fluency which emphasizes the flow of thought rather than immediate attention to the details of grammar, spelling, punctuation, etc.<sup>4</sup> After the students were stationed at their equipment, they were asked to do three minutes of free writing on the following topics. Each topic was introduced at the beginning of its free-writing period.

- Topic 1a (visible)  
Begin with these words and continue typing: "Typing on a computer . . ."
- Topic 1b (invisible)  
Begin with these words and continue typing: "I can't see what I'm writing, and . . ."
- Topic 2a (visible)  
Why do you think people write poetry?
- Topic 2b (invisible)  
Why do you think people read poetry?
- Topic 3 (visible)  
What do you think about all that we've been doing (i.e., free writing and invisible writing)?

The topics were shaped partly by the notion of cognitive complexity<sup>5</sup> and partly by the nature of the students' class assignments for that week. In addition, Topics 1a and 1b, and 2a and 2b, were designed to be somewhat comparable. Topics 2a and 2b were reversed in one group to explore order effects. This was not done with the first two topics, because it was thought that the given order was necessary to adjust students to the unusual nature of the "experimental" proceedings. The activities as a whole



were presented in an instructional context, i.e., a discussion of the composing process and of writing blocks.

The present focus is on invisible writing. While students' comments validated free writing as an aid to fluency and provided many quotable quotes, they will not be detailed here. Also, the present emphasis is on the students' self-reports, not on statistical analyses of the data. So, for example, it may be noted that serving as their own controls in a repeated-measure design the students produced essentially the same amount of invisible as visible writing on related topics. However, this estimation was based on visual examination of printouts and not on statistical tests applied to word counts.

The students in this investigation encountered a rather novel version of the "blank page" phenomenon. Normally, this occurs when someone must write something and is faced with—and intimidated by—a blank piece of paper which must be filled with "the right words in the right order." This situation, bane to many who find writing the aversive stimulus *par excellence*, is a classic set-up for inducing writer's block. This time, however, students were faced with a blank page which *remained blank* even after they had begun writing. Their first experience of this (Topic 1b) was commonly characterized as "fun," "helpful," or just plain "wierd." More importantly, many students found that the invisible writing procedure was a significant factor in promoting fluency.

I can't see what I'm writing, so I don't know if I'm making any mistakes . . . It's better this way because I can't see my mistakes, and I don't keep going back to correct my errors. That is what takes up a lot of my time when I write. I go over the work I have just written to find my mistakes and in doing this, I end up losing thoughts that I had before I began editing.<sup>6</sup>

This student had comprehended the wisdom of saving editing for a later stage of the composing process and had intuited the counter-productive, if enjoyable, aspects of computer-assisted text editing (see below for a discussion of research). As another student put it, "I just can't stand to see mistakes on the screen when I am writing. Maybe invisible writing will save me some time, and I can concentrate more on what I am trying to say."

The concomitant themes of premature editing and of the attendant loss of one's train of thought occurred in many students' comments and provided intriguing counter-evidence to conventional ideas about the importance of scanning to the composing writer.

Invisible writing is so different than visible writing. When I do visible writing, I tend to look back at what I've written and it slows my thoughts down, and I tend to lose track of what I had in my head. With invisible writing, I . . . think there's a sort of anticipation. I find I'm wondering what I'm writing and I look forward to seeing what's on my paper.

This student's comments echo those of E.M. Forster: "How can I know what I think until I've seen what I've said." For other students, the lack of visual feedback encouraged a more intimate relationship

between the writer and the writer's own thoughts.

What I write invisibly seems to come from within more so than when I can see what it is that I am writing. When I can't see it, the text comes more from my subconscious. How interesting.

Not every student, of course, had pleasant experiences. Several students, particularly those with formal typing training, expressed concern that during the invisible writing their eyes strayed to the keyboard, in violation of good touch-typing behavior. For others, losing the opportunity to re-read while writing became so distracting that it obstructed their fluency and interfered with their thinking:

I can't see what I'm writing, and it is really difficult to keep up with what I am saying. If I can't see what I'm writing, I feel . . . lost, and it throws me off the track.

Forster's observation, above, should seem as apposite here. More generally, however, students changed their attitudes as they got used to invisible writing, even over as short a time as provided in this experiment. For example, during the first invisible writing experience (Topic 1b) one student wrote:

I can't see what I'm writing, and it's kind of hard because you don't know if you're making any mistakes . . . Furthermore, it's hard to know what you've already said. When I usually free write, I don't look at the screen anyway, but at least I feel like I have accomplished something because I can see how much I have done.

I reflecting on her experiences, however (Topic 3), the same student adopted a more positive attitude.

I like the invisible writing because I'm not always correcting my errors, which is what I like to do when I am free writing, but which slows me down. It's fun to do because I am getting all my thoughts away from my mind, and my mind isn't breaking it down . . . If I free write visibly, I have to look away from the machine in order to truly say what I want to.

In summary, then, this invisible writing experiment with relatively inexperienced writers replicated important aspects of the earlier experiments with relatively experienced writers. The procedure discouraged the kind of local editing which is counter-productive at certain stages of the composing process, and it encouraged a quality of attention to the topic at hand, which is sometimes lacking in normal free-writing activities. In the present case, invisible writing is taken to be only one of many possible techniques for helping writers in the early stages of the composing process, a technique which is particularly adaptable to computer-assisted writing. It is important to stress, however, that not everyone found it a congenial procedure, even after practice.

Whether invisible writing is most productive as an intervention technique to combat writer's block or as a more generally useful approach for writing early drafts probably depends a good deal on the writer's habits and personality—although it is likely that at least the former can be changed. Certainly when working with students, it would be important to embed the procedure in a theoretical framework and to provide advice and guidance in learning to use what is essentially just another tool for particular applications.



For many of the students in this experiment, invisible writing helped them to see how premature editing interfered with the composing process, and it brought into sharp relief their own personal tendencies and compulsions in this regard. In the words of one student, "invisible writing helped me understand that writing really begins with prewriting."

### Word Processors and the Composing Process

For theoretical and research considerations, the composing process is often, in fact, divided into three stages: prewriting, writing, and rewriting. Prewriting includes thinking about the topic, making notes and false starts, doing early drafts, using idea-generating strategies such as brainstorming, etc. The writing stage consists of putting down the "final" version of the piece. At this point, the writer is fairly certain that he or she has "gotten it." Rewriting includes reworking the piece after some perspective has been attained. It also includes editing and proofreading. It has been noted that professional writers probably spend 85 percent of their time prewriting, one percent writing, and 14 percent rewriting.<sup>7</sup>

Computers not only can reduce the overall amount of time spent on a composing task, but also can alter the quantity and quality of time spent during a given stage. Anecdotal accounts of this effect are plentiful and enthusiastic. In addition, computer assistance for exploring topic areas (prewriting) and for analyzing texts (rewriting) is already in use.<sup>8</sup> Actual research into the effects of the technology on the composing process is far less thought-provoking. One such study will illustrate several of the related issues.

John D. Gould examined the composing process in individuals' use of word processors compared to the same individuals' performance in preparing hand-written documents.<sup>9</sup> In summarizing the results, Gould reports that texts "required 50 percent more time to compose" when done on word processors. However, this is a slightly misleading characterization of events. Drawing on Gould's own discussion of the study, it would seem more revealing to note that the writers chose to take more time. For example, they did a good deal of "local editing," i.e., dealing with individual words or lines rather than with reorganization or reconceptualization. This attention did not, it turned out, affect the quality of the writing. The total amount of time taken to produce a finished document was, in fact, greater for the hand-written texts, if secretarial typing of hand-written drafts is included. It is also noteworthy that the participants normally preferred word processors over handwriting and were quite surprised that they were in some respects slower writers when using them. In discussing the results of his experiments, Gould suggests that people using word processors may spend more time on composing tasks because they are having more fun, and he compares them with pinball machines, video games, and roulette wheels.

Imagine having to tell students, "Stop spending so much time editing your papers. You're working on them too much." Would that most teachers of

writing were so fortunate. On the one hand, it is unlikely that most students will be drawn to word processors with the same intensity that they are currently engaged by video games. On the other hand, there would seem reason enough to explore the unique qualities of this new composing tool—those special attributes of the technology which give the writer new powers and incentives.

James Joyce, for example, using an editor which automatically fills lines when the text is formatted, suggests that students enter their text a phrase to a line.<sup>10</sup> Aside from making later editing easier, Joyce suggests that this method allows students more easily to notice whether a phrase is too long, helps the writers focus on intact semantic units, and encourages syntactic maturity in conjunction with sentence-combining procedures such as those described by Christensen.<sup>11</sup> In addition, Joyce suggests that in some cases of writer's block, the simple act of scrolling text up the screen "literally gets things moving again. This has worked successfully when all that was being formatted was the title, name of the author, and the author's address.

In the future, it is hoped that instruction in using a word processing system will be just the first step in helping individuals learn how to fully exploit its potential. The invisible writing method, along with procedures like the ones Joyce describes, are merely early attempts to explore and understand this potential. The success of such approaches provides encouragement and direction for those who see word processing as a major instructional resource for education in English and the Language arts.

### Notes

1. S. Perl. *Understanding Composing. College Composition and Communication*, December 1980, 31; James Britton et al. *The Development of Writing Abilities*. London: Macmillan, 1975.
2. S. Blau. *Invisible Writing: Investigating Cognitive Processes in Composition. College Composition and Communication*, in press.
3. The authors would like to thank Mark Ferrer, Director of the UCSB Program of Intensive English, and his colleagues, Alida Moss, Lucinda Hilbrink, and Donald Wolff, for making their classes available for this investigation.
4. P. Elbow. *Writing Without Teachers*. New York. Oxford University Press, 1979.
5. J. Moffett. *Teaching the Universe of Discourse*. Boston. Houghton Mifflin, 1968; see also S. Blau, op. cit.
6. This and other free-written passages quoted have been edited for mechanical errors.
7. D.M. Murray. *Teach Writing as a Process Not Product. The Leaflet*, November 1972, New England Association of Teachers of English.

8. For anecdotal accounts, see D. Van Nouhuys, *The Micro and the Professional Writer*, *Interface Age*, October 1981; see also, D. Watt, *Word Processors and Writing*, *Popular Computing*, June 1982. Prewriting software for prose includes that described by H. Burns (*Stimulating Invention in English Composition Through Computer-Assisted Instruction*, *Educational Technology*, 1980, 20, 5-10) and B. Wresch (*Prewriting, Writing, and Editing by Computer*, paper presented at the Conference on Composition and Communication, San Francisco, 1982). Text analysis software for aid in editing includes that described by L. Cherry and W. Vetterman (*Writing Tools—The STYLE and DICTION Programs*, Bell Laboratories Computing Science Technical Report No. 91). Software designed to engage the user in each stage of the poetry composing process has been described by S. Marcus (*Compupoem: CAL for Writing and Studying Poetry*, *The Computing Teacher*, March 1982).
9. J.D. Gould. Composing Letters with Computer-Based Text Editors. *Human Factors*, 1981, 23(5). Gould's description of the "local editing" syndrome has also been observed by Ruth Von Blum in her work at the University of California, Los Angeles (personal communication).
10. J. Joyce. UNIX Aids for English Composition Courses. Presentation at the Western Educational Computing Conference, San Francisco, 1981.
11. F. Christensen. *The Christensen Rhetoric Program. The Sentence and the Paragraph*. Teacher's Edition. New York: Harper and Row, 1968.

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# Class-Based Writing Research: Teachers Learn from Students\*

Nancie M. Atwell

In reviews of writing research in the *English Journal*, discussion almost invariably focuses on procedures and findings of experimental design research conducted by professional researchers. These inquiries follow the traditional, scientific model of research—establishing control groups of teachers and students, assigning instructional strategies and materials as variables, measuring the relative benefits of one or another teaching method through a statistical analysis of the resulting written products, and then explaining and predicting teaching and learning processes based on this evidence.

Experimental design research of this nature has had relatively little effect on classroom practices in teaching writing. Investigations that focus on the teacher and the method ignore the broader context of the learner's writing behaviors, concepts, and backgrounds, and the often contradictory results do not provide teachers with useful insights into the nature of language and writing processes and their development.

## A Shift in Research Emphasis

The last decade has witnessed an important shift in emphasis in writing research. Janet Emig (1971), Donald Graves (1975), Graves, Lucy Calkins, and Susan Sowers (1978–1980), Glenda Bissex (1980), and others provided teachers with a new kind of information about students' writing. Rejecting the scientific model of writing research, they turned instead to naturalistic studies of writers' activity, observing writers *in the process* of composing. Their procedures—case study, documentation, and description—are characterized by extensive and prolonged data-gathering and full attention to and acknowledgement of context: the setting in which the writing is produced; the student's rehearsing, writing, and revising choices and behaviors; the student's concepts of writing, audience, and functions which writing serves; the student's background as a reader and writer; and a complete and chronological collection of the student's written texts. Based upon an examination of these data, the naturalistic researcher generates hypotheses concerning writing processes in contrast to the experimental-design procedure of generating data (written products) to prove *a priori* hypotheses.

Descriptive studies of writers' activity yield information that makes sense to classroom teachers.

And it is a method that teachers can employ to inquire into students' writing processes and practices. As guests in our schools, professional researchers such as Emig and Graves have demonstrated the value of data-gathering in carefully described, natural settings. We teachers are in an ideal position to observe, describe, and learn from the behavior of student writers. As those who will benefit most from increased awareness of children's language learning processes, it is to our advantage to take on the role of researchers.

## Teachers as Researchers

In Boothbay, Maine, fourteen teachers, grades one through eight, have done just that. Working together to develop a theoretically sound, research-based writing curriculum, we are writing, studying our writing, reading writing theory and research findings, and conducting our own class-based, naturalistic, writing research. Using inquiry procedures modeled on those of Dixie Goswami (1979), Goswami and Lee Odell (1981), Emig (1971), and Graves (1975, 1978–1980), we observe children through the course of the writing process; conduct regular interviews with student writers, focusing on their writing behaviors, choices, and constructs; gather background information on students' writing and reading histories; collect, maintain, examine, and describe writers' scripts; and keep daily logs to record observations of student writers' activity. Rather than design a writing curriculum based on prior practices and assumptions, publishers' materials, or mastery checklists, and then evaluate its effect on students' written products, we spent a school year observing and describing students' writing processes and designing a curriculum based on what we learned from the writers in our classrooms.

In their forthcoming text, *Studying Writing: Theories, Contexts, and Applications*, Dixie Goswami and Lee Odell speculate about the nature of transformations which will occur in teachers' perceptions, instructional practices, and levels of professional activity when they conduct class-based research. These conjectures have been realized in the experiences of Boothbay teachers. The following is a descriptive analysis of the changes in fourteen classroom teachers who became writing researchers this year.

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Goswami and Odell posit that teachers who study their own writing and the writing of their students undergo a transformation in their classroom behavior. Six months into our inquiries, we have dramatically altered our approach to teaching writing. We found that we concur with Donald Graves in that we slow down when we engage in looking at and thinking and raising questions about our students' writing activity. Rather than conforming writing instruction to our timing, we adjust teaching to attend to individual students' needs, progress, and stages in the writing process. We stop focusing on presenting a lesson and evaluating its results and start observing our students in the process of learning, listening to what they can tell us, and responding as they need us. As a result, a different relationship between teacher and student emerges. The teacher-centered classroom becomes a community of writers and learners in which teachers and students are partners in inquiry. (*emphasis mine.*—G.P.)

Joyce Parent, a second grade teacher, devoted half her scheduled hour-and-a-half-per-week writing time last year to providing lessons to motivate students to write. This year, she allots four and a half hours each week to writing. Her students are writing, and she listens to what they have written, responds to their questions, asks questions about their drawings and writing, logs observations, records data about skills she noticed or introduced in individual writing conferences, writes, and shares her writing with students. Parent discovered that students can provide their own direction, and she sees children she had previously assumed required her motivation carry clipboards onto the playground so they can continue to write at recess.

In past years, first grade teacher Pam Hall stood at her chalkboard conducting lessons in the construction of complete sentences or calling students one at a time to her desk so they could dictate and she could transcribe the endings to sentences which she had started for them. She now holds daily publishing conferences with first grade authors in which they read to her books they have written and then select the story they would like to have typed and published for the classroom library. Prior to her research, she thought first grade writers "couldn't do much on their own." Today she says, "They can accomplish a lot on their own. They'll try to get me to do it, but I won't. They have to have the control if they're to learn." Last year, her firm expectation was that students should leave first grade knowing how to write a complete sentence. She now refuses to speculate about their June writing skills. "I'm afraid I'll hold them back by limiting my expectations. They're doing so much now I think, what will they be doing by the end of the year?"

Susan Stires is Boothbay's resource room teacher. Students who come to her for instruction

are identified as writing-disabled. Last year, she "gave up on writing, because the interesting, creative topics I chose went flat" and turned to worksheet exercises in sentence construction and combining. This year, she focuses on what her students can do as writers. They choose their own topics, draft, seek and give response in writing conferences, revise, edit, and publish. She says, "This may sound crazy, but I think they're smarter. They seem livelier; they talk about things more, and in more interesting ways. Maybe it's just that I'm listening to them this year, and attending to and appreciating what they do know about."

Because we focus on individual students' learning processes in the context of their writing, another significant change is our growing awareness—and acceptance—of individual differences. Rather than emphasizing mastery or ranking our students, we looked for growth in students' control over the writing process and discovered as many writing processes as there were students. Parent remarked that as a result of two formal case studies she is conducting, she is closer to all her students. "I sometimes feel as if I'm doing twenty case studies. Now that I'm really looking and listening, I've discovered that each of my kids is doing something interesting, something of note, something unique."

Finally, regarding the evolution of our classroom behaviors, we found that the teacher who is also a researcher is no longer a victim of "our profession's energy crisis" (Graves, 1978). When we change our role to that of an inquirer, we become learners. We no longer feel drained by the demands we impose on ourselves when we view our classrooms as contexts which we motivate, orchestrate, and evaluate. Third grade teacher Debbie Matthews recently remarked of a student, "He's the kind of writer whose papers I would have dreaded correcting last year. He would have been bored with what I'd assigned, and I would have been bored with what he'd written. His mechanics were way below most of my other kids', too. Now, I really look forward to hearing and reading what he has to say and how he'll say it. And the growth I'm seeing in his writing—on every level—is remarkable."

### Some Satisfaction

Goswami and Odell theorize that a second outcome of teachers becoming researchers is a change in their professionalism and in their status within the teaching profession. On the most basic—and perhaps most important—level, this means a change in the quality of teacher involvement. Talk in our teachers' room has a new dimension



as Boothbay teachers-researchers help each other to share insights, observations, and speculations concerning our own and students' writing. The nature of teacher-talk shifted away from discussions of specific childrens' problems and teacher frustrations toward excited descriptions of students' resourcefulness and accomplishments and question-raising concerned with the logic behind a particular writer's behavior.

As researchers, we discovered a new pride in being classroom teachers. Our roles and functions in the community of educators have been redefined. We came to see ourselves as professionals, active in and central to the betterment of writing instruction, rather than as peripheral recipients of other's theories, findings, and programs. We are more knowledgeable about curriculum design. We are writing descriptions of our research. We serve as resources to teachers outside our district. And we see a change in our community's perceptions of our professionalism and expertise.

In addition to increasing our professional activity, we increased our use of professional resources. As researchers, we ask questions and turn to other sources for help, seeking out and drawing on—and criticizing—procedures and findings of other researchers. Susan Stires, intrigued by the nature of her students' writing disabilities, looked at the research. Frustrated by what she perceived as a misguided emphasis on the surface features of writing—spelling and handwriting—she wrote a paper based on language theory she had read, her own research, and her insights into the appropriateness of descriptive, nonstatistical research procedures in investigating childrens' writing disabilities.

Goswami's and Odell's final rationale for teacher conducted, class-based research is the richness of the data gathered. As researchers and participant-observers, we observe and describe, daily and minutely, the writing processes of our students. Because they are our students, we know them better than professional researchers do, we know them differently, we have a natural access to their learning behaviors, and we have the most at stake. It makes sense that we, too, pose questions and seek answers in the contexts where those questions and answers count most. It is time that teachers began, as Ann Berthoff (1979) says, to "look and look again at what happens in the English classroom. We do not need new information; we need to think about the information we have."

### Some Needs

How can classroom teachers acquire the background in language theory and research procedures to enable them to conduct full, naturalistic

investigations of their students' writing processes? At Atkinsor. Academy in New Hampshire, site of Donald Graves's two-year study of children's writing development, first grade teacher Mary Ellen Giacobbe (1981) is designing and conducting her own class-based research, using inquiry methods she developed as a result of her work with Graves. In Boothbay, the director of the elementary school's writing project is also a student at the Bread Loaf School of English Program in Writing, a graduate school unique in encouraging and training teachers of writing in naturalistic, class-based research procedures. Because we feel strongly that the field of writing research must be expanded to include inquiries conducted by classroom teachers, we suggest these possibilities.

1. Universities and state departments of education can begin to foster teacher-conducted research by including teacher-researcher courses in certification programs.
2. Teachers can request their directors of in-service programs to provide workshops and seminars in theories and procedures of writing research.
3. Teachers can establish—perhaps through Bread Loaf's Program in Writing or NCTE—nation-wide networks of teacher/researchers who can exchange information and assistance.
4. Funding sources which support educational research, such as the National Institute of Education, can begin to look to and finance classroom teachers as researchers.
5. NCTE can demonstrate its commitment to teacher-conducted, class-based research by seeking funding sources to support teachers' research and by publishing research findings of regular classroom teachers—those working without institutional connections, using naturalistic inquiry procedures which do not result in statistical data toward which journals of educational research are so heavily biased.

There is great need for basic research in writing, research to provide educators with theories and definitions of writing essential to the development of effective teaching methods. And there is an untapped resource for carrying out such research—the classroom teacher. When we acquire the researcher's tools, when we assume responsibility for exploring the real questions we have about our students' writing development, and when we are supported in our efforts by the educational community, the whole profession will benefit.

### References

- Berthoff, Ann E. "The Teacher as Researcher." Paper presented to the California Association of Teachers of English, San Diego, California, February 1979.

- Bissex, Glenda L. *Gnys at Wrk: A Child Learns to Write and Read*. Cambridge, Massachusetts: Harvard University Press, 1980.
- Emig, Janet. *The Composing Processes of Twelfth Graders*. Urbana, Illinois: National Council of Teachers of English, 1971.
- Giacobbe, Mary Ellen. "Who Says That Children Can't Write the First Week of School?" *Learning* (1980), in press.
- Goswami, Dixie. Classroom presentation at the Bread Loaf School of English, July 1979.
- Goswami, Dixie and Lee Odell. *Writing in a Social Service Agency*. Washington, D.C.: Report to the National Institute of Education, 1981.
- Goswami, Dixie and Lee Odell. *Studying Writing: Theories, Contexts, and Applications*. Rochelle Park, New Jersey: Hayden (in press).
- Graves, Donald H. "An Examination of the Writing Processes of Seven Year Old Children." *Research in the Teaching of English* 9 (Winter 1975): 227-241.
- Graves, Donald H. "We Can End the Energy Crisis." *Language Arts* 55 (October 1978): 795-796.
- Graves, Donald H. "Students Write; We Listen: A New Source of Energy." Presentation to the New York University Language Arts Conference, New York City, April 1980.
- Graves, Donald H., Lucy Calkins, and Susan Sowers. Papers describing their 1978-80 inquiry into children's writing development. Available through the University of New Hampshire Writing Process Laboratory and published in *Language Arts, Learning, Visible Language, Research in the Teaching of English, Teaching*, and other educators' journals.

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Gail Parson has taught secondary school English, reading, social studies and drama for eleven years—the last six of which have been in Alaska. She has a B.A. and M.A. in English Education, and has spent two summers in the Breadloaf Graduate School of English Program in Writing at Middlebury College, Vermont and at Oxford University, England. In 1980, she attended the Bay Area Writing Project Program at the University of California, Berkeley, returning to Alaska to subsequently direct two Summer Advanced Institutes and two Summer Open Institutes of the Alaska State Writing Consortium. She has taught a variety of teacher training workshops, and graduate university courses in content reading, process approaches to writing instruction, curriculum development integrating word processing, and classroom-based teacher research. Currently, she is based in Juneau, and does educational consulting for the Alaska Department of Education and school districts around the state.

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